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http://epublications.marquette.edu/dissertations_mu/225

THE RELATIONSHIP BETWEEN DISPOSITIONAL ATTACHMENT AND CAREGIVING
STYLES, VALUES, AND PROSOCIAL PERSONALITY AND BEHAVIOR

by

Robert Scott DuBois, M.A.

A Dissertation submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

December 2012

ABSTRACT
THE RELATIONSHIP BETWEEN DISPOSITIONAL ATTACHMENT AND CAREGIVING
STYLES, VALUES, AND PROSOCIAL PERSONALITY AND BEHAVIOR

Robert Scott DuBois, M.A.

Marquette University, 2012

A growing body of descriptive and experimental research evidence and theoretical analysis suggests that attachment security, an inner confidence or sense that one's self and others are reliably available, sensitive, responsive and effect sources of support through difficult times, may prompt compassionate thoughts, feelings, values and behavior consistent with the Golden Rule. The current research contributes to this important body of scientific research by positing, testing, and as appropriate revising a theoretically and empirically meaningful structural model that outlines justifiable direct and indirect paths through which dispositional attachment security, developmentally transmitted in part across and within generations by one's caregivers, are translated into one's dispositional caregiving style, morally-relevant values, prosocial personality characteristics, and, ultimately, prosocial behavior.

ACKNOWLEDGEMENTS

Robert Scott DuBois, M.A.

As the first college graduate in my family, I am indebted to the help of many wonderful people and organizations. First, I am blessed to have had the support of the faculty and staff of Marquette University. My dissertation director and program advisor, Dr. Timothy Melchert, offered patient, wise guidance and mentoring that has been central to my personal and professional development. The Marquette University Graduate School facilitated highly effective dissertation support sessions and boot camps that helped me and complete my dissertation. My dissertation committee members, Dr. Rebecca Bardwell and Dr. Robert Griffin of Marquette University, and Dr. Wen Luo of the University of Wisconsin at Milwaukee, provided clear direction and timely feedback. The faculty, staff, and graduate students at Marquette University have also been a tremendous source of support for me. The richness of my graduate experience is a direct result of their kindness, expertise, integrity, suggestions, and feedback.

Second, I have truly grown throughout my life because of the prosocial behavior of several special people, most notably, Mrs. Cleomae Dungy, a remarkable high school speech teacher, Mr. Tom Clemons, a volunteer Big Brother of America, and Mr. Richard DeWolfe, Sr., my grandfather. Mrs. Dungy believed in me -- "Bob DuBois and God's Army can accomplish great things!" -- and gave freely of her time to

help me develop into a successful young adult. Mr. Clemons shared his family and time with me and helped to shape my identity during much of my childhood. My grandfather was my greatest fan and closest friend and I know he believed I would one day graduate with a doctoral degree.

Third, I am blessed to have the support of a truly awesome boss, Dr. Elvira Craig de Silva, and talented colleagues and staff at Waukesha County Technical College (WCTC). Dr. de Silva helped arranged my work schedule so I could finish my course work and dissertation. I am blessed to work at a truly first class educational institution.

Finally, and most importantly, I could not have truly finished my doctoral studies and dissertation without the unwavering love and support of my immediate family, especially my wife, Lois DuBois, my children, Hannah and Brandon, my grandchildren, Jacob and Isabella, my brother, Bill, his family, and my mom, Dianne. I'm also grateful for the support of my mother-in-law, Dr. Doris Hammer, who provided the catalyst that sparked my ultimate quest to achieve a doctoral degree. I dedicate my dissertation to her and to all who purposely choose a prosocial path consistent with the Golden Rule. I truly appreciate everything my family and others have sacrificed to make it possible for dreams to come true. Thank you!

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CHAPTER 1: INTRODUCTION

"What thou avoidest suffering thyself seek not to impose on others." ~ Epictetus¹

"Never impose on others what you would not choose for yourself." ~ Confucius²

"Do to others as you want them to do to you." ~ Jesus³

The Golden Rule, variations on which are shared above, suggests that moral behavior is rooted in a deep and mutual respect and consideration for others. Many individuals (and nearly all religions and cultures) express values and prescribe moral principles consistent with universal respect and benevolence for others. But not all individuals regularly think, feel, and act in ways consistent with these values and principles. A growing body of descriptive and experimental research evidence and theoretical analysis suggests that *attachment security*, an inner confidence or sense that one's self and others are reliably available, sensitive, responsive and effective sources of support through difficult times, may prompt compassionate thoughts, feelings, values and behavior consistent with the Golden Rule (e.g., Mikulincer and Shaver, 2005a). It appears that as we achieve our own sense that others (and in turn one's self) are safe havens from harm and secure bases for openness and personal growth, we indeed develop the capacity to perceive others as individuals who need comparable autonomy, safety and support.

The purpose of this research is to contribute to this important body of scientific research and critical thought by positing, testing, and, as appropriate,

¹ Enchiridion

² Analects XV.24

³ Luke 6:31

revising a theoretically and empirically meaningful structural model that outlines justifiable paths through which dispositional attachment security, developmentally transmitted in part across and within generations by one's caregivers, may be translated into one's dispositional caregiving style, morally-relevant values, prosocial personality characteristics, and, ultimately, prosocial behaviors.

The Proposed Conceptual Model

The structural model that will be tested in the proposed study is shown in Figure 1.1 below. Four major psychological constructs – dispositional attachment security (i.e., attachment avoidance and attachment anxiety), dispositional caregiving style (i.e., caregiving avoidance and caregiving anxiety), morally relevant values (i.e., self-transcendence and self-enhancement values), and prosocial personality (i.e., other-oriented empathy and helpfulness) - serve as hypothesized vital antecedents of the ultimate construct of concern, prosocial behavior, or voluntary acts intended to benefit others.

Below is a brief description of each of the major constructs in the proposed model and their hypothesized relationships with each other. Chapter 2 provides a more detailed explication of the major constructs in the proposed model, including a conceptual and historical overview of relevant theory and a summary of the empirical evidence and theoretical rationale that substantiate each of the posited paths between model constructs.

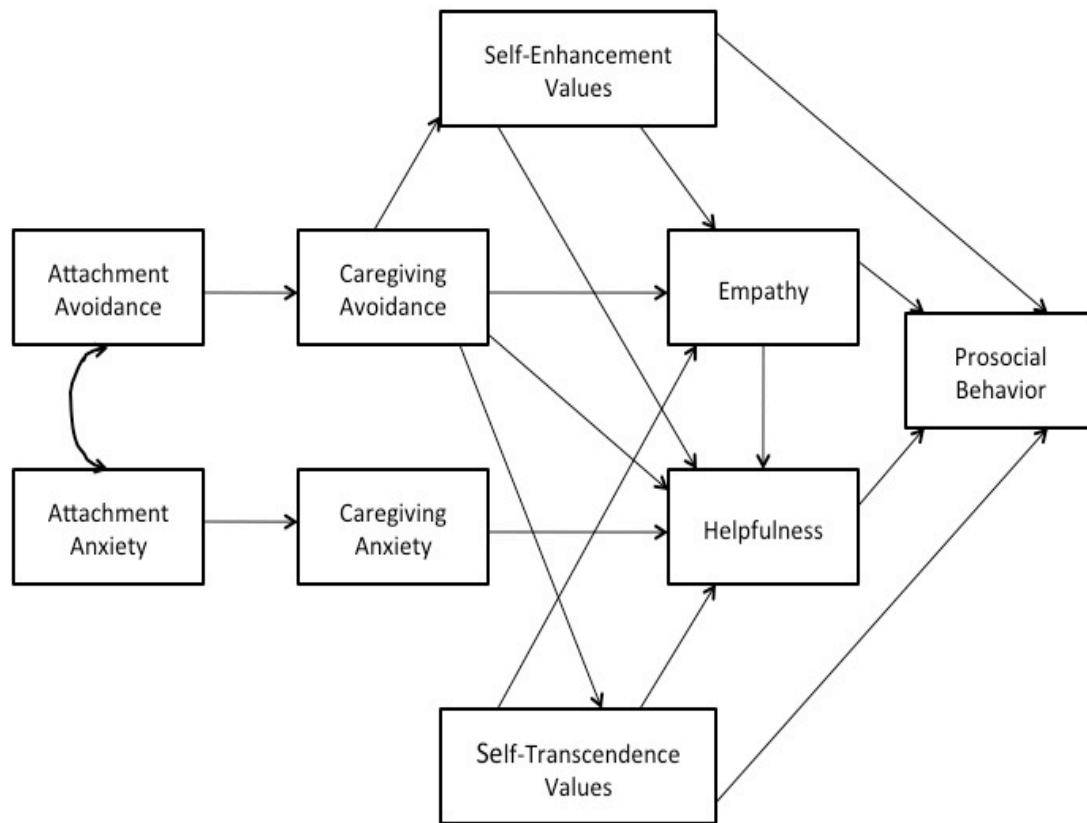


Figure 1.1. Conceptual model tested in this research.

Attachment Theory

The two initial antecedent constructs in the proposed model, *attachment security* and *caregiving style*, are conceptual bedrocks of attachment theory (Bowlby, 1969, 1982). These constructs represent the major operational descriptors of two key complimentary attachment behavioral systems, the attachment and caregiving systems. While the attachment behavioral system motivates individuals to seek proximity to others who will (it is hoped) meet their needs for timely and

responsive protection, affiliation and support, the caregiving behavioral system motivates individuals to offer timely and responsive protection, affiliation and support to others in need.

Consistent with attachment theory, the proposed model suggests that one's dispositional attachment security, measured along two orthogonal dimensions (*attachment avoidance* and *attachment anxiety*) has a direct positive relationship with one's dispositional caregiving security, also measured along two orthogonal dimensions (*caregiving avoidance* and *caregiving anxiety*). Specifically, the proposed model suggests that attachment avoidance directly influences caregiving avoidance, while attachment anxiety directly influences caregiving anxiety. The avoidance and anxiety dimensions reflect the degree to which individuals inhibit or escalate efforts to achieve a personal sense of felt security (i.e., attachment security) or to foster a sense of felt security in others (i.e., caregiving security). In essence, both of the attachment theory systems are focused on same end - *felt security*, but the individual(s) for whom the systems aim to promote this sense of security differ (i.e., for the attachment system, the focus is ultimately the self, and for the caregiving system, the focus is ultimately others).

Values

Values are the criteria individuals use to select, justify and evaluate self, others, things, and events (Schwartz, 1992). The values of main interest in the present study include those related to prosocial personality characteristics and prosocial behavior. These values are expected to be influenced by one's level of

attachment and caregiving security, and include two theoretically posited contrasting dimensions, *self-transcendence values* and *self-enhancement values*, from Schwartz's (1992, 1994) model of values.

Self-transcendence values appear especially consistent with the Golden Rule and include *universalism* (i.e., understanding, appreciation, tolerance and protection for the welfare of individuals and for nature) and *benevolence* (i.e., preservation and enhancement of the welfare of individuals with whom one is in frequent personal contact). Self-enhancement values, on the other hand, appear at least in part inconsistent with the Golden Rule and include *achievement* (i.e., personal success through demonstrating competence according to social standards) and *power* (i.e., social status and prestige, control or dominance over individuals and resources). In addition to their conceptual relevance to the Golden Rule, the self-enhancement and self-transcendence values were also identified in previous research as moral values (Schwartz, 1995). Moreover, similar to attachment and caregiving styles, these moral values are especially relevant to the beliefs one has about self and others (Schwartz, 2007, 2010).

The proposed conceptual model suggests that caregiving security, particularly caregiving avoidance, directly influences the degree to which one endorses self-enhancement and self-transcendence values. Moreover, both self-enhancement and self-transcendence values are posited to directly influence both prosocial personality and prosocial behavior. Specifically, the proposed model posits that caregiving avoidance will be positively related to the endorsement of self-enhancement values and inversely related to the endorsement of self-

transcendence values. No relationship is initially posited between caregiving anxiety and self-transcendence values. However, an endorsement of self-enhancement values is expected to relate inversely to prosocial personality dimensions and behavior. Conversely, an endorsement of self-transcendence values is expected to relate positively to both prosocial personality and behavior.

Prosocial Personality

Prosocial personality, as conceptualized by Penner, Fritzche, Craiger and Freifeld (1995), is the fourth major construct assessed in this study. Prosocial personality is comprised of two correlated dispositional dimensions, *other-oriented empathy* and *helpfulness*, that are, across time and situations, associated with one's consistent tendency to engage in helpful or prosocial acts. Other-oriented empathy primarily concerns a tendency for prosocial thought and feeling, including empathic concern, perspective taking, and a sense of social responsibility. Helpfulness reflects a stable, confident sense of identity as a helper, including self-efficacy as a helper and the expressed ability to effectively manage one's own emotions when another person is in need. The Penner et al. (1995) model of the prosocial personality that is used in this study resulted from the deliberate empirical integration of multiple known measures of traits and characteristics of individuals predictive of prosocial behavior.

In the proposed conceptual model, the two prosocial personality dimensions are expected to be positively related to each other. Specifically, helpfulness is proposed to be influenced by other-oriented empathy.

Prosocial personality is also hypothesized to be influenced by both caregiving security and self-enhancement and self-transcendence values. Specifically, caregiving avoidance is expected to be inversely related to both prosocial personality dimensions, while caregiving anxiety is expected to be inversely related to the helpfulness dimension of prosocial personality. Self-enhancement values are expected to be inversely related to both prosocial personality dimensions, while self-transcendence values are expected to be positively related to both prosocial personality dimensions. Both prosocial personality dimensions are also proposed to be positively related to prosocial behavior.

Prosocial Behavior

The ultimate variable of interest in the conceptual model tested in this model is *prosocial behavior*, or voluntary acts intended to benefit others. Prosocial behavior is distinct from altruism. Altruistic behavior is a subset of prosocial behavior motivated solely by the wish to improve another individual's well being without the expectation of personal benefit or reward. While some researchers have questioned whether true altruism exists (e.g., Maner, Luce, Neuberg, Cialdin, Brown & Sagarin, 2002), Batson (2010) summarizes more than 30 experiments and argues that true altruism can be found in human nature. However, true altruism is an especially difficult concept to measure via self-report and is not the focus of this study. Prosocial behavior is a more generic term for any voluntary act intended to benefit another without concern for the motive (Bierhoff, 2002).

The proposed conceptual model purports a positive relationship between both dimensions of prosocial personality and prosocial behavior. In addition, it is hypothesized that prosocial behavior is influenced by both self-enhancement and self-transcendence values. Specifically, an endorsement of self-enhancement values is expected to be inversely related to self-reported prosocial behavior and an endorsement of self-transcendence values is expected to be positively related to prosocial behavior.

Statement of the Problem

Each of the four major antecedent constructs in the proposed conceptual model – attachment style, caregiving style, values, and prosocial personality - has been the focus of extensive research and critical reflection. This body of existing research, reviewed and synthesized more extensively in Chapter 2 below, strongly suggests that there are meaningful relationships among these constructs and prosocial behavior that are entirely consistent with the proposed model. However, despite a wealth of studies that assess the relationships between the various subsets of the constructs proposed in the current model, no single study to date has attempted to organize and assess the combined influence and interactions of all of these constructs. Hence, the current research aims to integrate existing science and help advance our understanding of the antecedents of prosocial behavior.

Leading researchers who have also reviewed and synthesized the literature relevant to attachment, caregiving, values and prosocial personality also echo the need for this type of integrative study. For example, Mario Mikulincer and Phillip

Shaver (2007), two leading attachment theory researchers, assert more research is needed “... to determine how attachment security and the different forms of insecurity relate to other prosocial emotions, personality traits and moral qualities” (p. 345). Shalom Schwartz (2008), a leading values theory researcher also calls for more research on the connections between values and other moral constructs, including personality dispositions. Hans-Werner Bierhoff (2002), a prosocial behavior scholar, also suggests that more research is needed on “the processes that provide a prosocial motivational orientation” (p. 335). The current research attempts to answer these calls for more integrative research on an area of concern since the dawn of recorded history, namely, the nature of compassion and whether we choose to care for, respect, and ultimately help others in ways consistent with the Golden Rule

CHAPTER 2: REVIEW OF THE LITERATURE

The proposed conceptual model (see Figure 1.1) resulted from a thorough review and synthesis of the relevant theory and empirical research for each of the components in the model, including the constructs of attachment theory (i.e., attachment styles and caregiving styles), values, prosocial personality, and prosocial behavior. This chapter documents this review and synthesis and offers conceptual and empirical justifications for each of the relational paths posited in the conceptual model. The review purposefully moves systematically through the model constructs from attachment styles through prosocial behavior and is supported by figures that isolate and clarify the nature of particular model paths of focus. At the end of the review, the full structural equation model and its supportive evidence are briefly summarized.

Attachment Theory

Attachment theory is among the most comprehensive and tested theories in psychology today with recent edited volumes summarizing a compelling and provocative body of relevant, replicated research findings and critical analyses produced by a variety of investigators and thinkers across multiple disciplines (for extensive reviews, see Cassidy & Shaver, 2008; Mikulincer & Shaver, 2007). Central to attachment theory is a lifespan and bio-psycho-social account of the impact that

close relationships have as “the hub around which a person’s life revolves” (Bowlby, 1980, p. 442).

The primal nature of attachment as a motivational and behavioral system is rooted in the universal, biologically-evolved human need to respond to threat by thinking about, seeking out, monitoring, and maintaining close proximity to stronger and wiser caregivers (i.e., attachment figures) who are necessary for survival (Bowlby, 1980). The goal of attachment seeking thoughts, emotions, and behaviors across the life span is protection from present danger and reassurance of security and safety from harm. The nature of moment-by-moment (and generalized) attachment thoughts, emotions, and behaviors is based on an appraisal of the current and future availability and responsiveness of effective caregivers. These thoughts, emotions, and behaviors are particularly salient under times of distress.

According to attachment theory (e.g., Bowlby, 1980, 1982), we are born with instinctive drives to maintain felt security. Across the lifespan, beginning with early interactions with primary caregivers, we grow increasingly flexible, context-sensitive and skillful at regulating negative emotions; maintaining equanimity; and sustaining valuable relationships necessary for a stable sense of felt security. The ways we find success at seeking out, maintaining and sustaining felt security ultimately become part of a personalized network of generalized, context- and relationship-specific internal working models or complex if-then propositional schemas. These schemas guide our own behavior and bias (favorably or unfavorably) our perceptions and expectations of own and others’ behavior, cognition and emotion. Beginning in infancy and continuing throughout the lifespan,

humans develop a predominant style of attachment behavior, including a distinct pattern of expectations, needs, emotions and social behavior aimed at maintaining a sense of felt security. This predominant or chronic attachment style is most evidenced when a person is distressed by perceived (actual or imagined) threats and then seeks (consciously and unconsciously) to employ attachment strategies to feel secure and safe from harm.

Attachment Styles

Attachment security is the principal means by which theorists gauge the impact of care receiving and other close relationships on an individual's life. Originally, attachment security was conceptualized as a three-category typology of attachment styles, including secure, anxious, and avoidant styles (Ainsworth, Blehar, Waters & Wall, 1978). Starting in the 1990s, attachment styles have been typically conceptualized as regions in a continuous two-dimensional space representing the degree to which orthogonal constructs, attachment anxiety and attachment avoidance, characterize the ways one strives to attain felt attachment security (Bartholomew & Horowitz, 1991).

Attachment behaviors marked by heightened *attachment anxiety* (characteristic of an insecure-anxious attachment style) are exaggerations or escalations of attachment strategies that serve as intense pleas and maneuvers to prompt caregivers to be available and responsive to one's needs. These hyperactivating attachment behaviors stem from a chronic hypersensitivity to and exacerbation of personal threat cues (and the intense psychological pain they

activate), coupled with chronic self-doubts about one's ability to effectively cope with life's problems, and a persistent perception (especially when distressed) that those individuals on whom one depends for felt security will remain unavailable and unresponsive to all but the most intense appeals for support. The hyperactive strategies used by individuals with heightened attachment anxiety to seek security are chronic attempts to respond to the persistent distress of negative emotions that signal real or imagined threat to self.

Attachment-deactivating behaviors marked by heightened *attachment avoidance* (characteristic of an insecure-avoidant attachment style) are inhibitions of attachment strategies that serve to deny and dismiss the need for caregivers. Avoidance strategies ultimately promote compulsive self-reliance as the only consistently effective (and distress resistant) means to attain and sustain felt security. Distress among those with heightened attachment avoidance is suppressed by the avoidance, minimization and denial of personal threat cues (and the intense psychological pain they may activate), coupled with an overconfident view of the self as superior to others as a means for effectively (and as painlessly as possible) coping with life's problems. Individuals with heightened attachment avoidance can be conceptualized as emotion-phobic and the strategies they employ to deny, minimize, and dismiss possible threats represent a "see no threat, hear no threat" defense strategy. However, despite their best attempts to shield themselves from distress, individuals with heightened avoidance are, when threats cannot be avoided, capable of intense negative emotional outbursts. It is not surprising then that individuals with heightened attachment anxiety or heightened attachment

avoidance are especially vulnerable to various forms of psychopathology as well as criminal behavior (Mikulincer & Shaver, 2007).

Attachment behaviors marked by both heightened anxiety and heightened avoidance (characteristic of an insecure-disorganized attachment style) includes a complex mix of both inhibitions and exaggerations of attachment strategies implemented in a haphazard, confused and chaotic manner. Heightened anxiety and avoidance are positively associated with the severity of symptoms of individuals with borderline personality disorder, a disorder marked by chronic suicidal behavior, self-harm, and instability in emotions, thoughts, behaviors, and identity, in both clinical and community samples (Levy, Meehan, Weber, Reynoso & Clarkin, 2005; Mikulincer & Shaver, 2007).

Individuals who demonstrate both low attachment anxiety and low attachment avoidance possess a *secure attachment style*. The working models of individuals with attachment security include three core sets of declarative beliefs: (1) an optimistic, hopeful appraisal of life's problems as manageable; (2) positive beliefs about one's worth, competence, and mastery as an agent for coping with life's problems; and (3) positive beliefs about others' intentions and competence as support resources for coping with life's problems (Mikulincer & Shaver, 2005b). These declarative beliefs are supported by a reliance on effective emotional regulation and constructive problem solving strategies when facing life's problems. Central to these strategies is a mutual (interdependent) reliance on both self and social support as the preferred means for feeling secure and safe. Mikulincer and Shaver (2007) outline substantial evidence of the beneficial impact of attachment

security on emotional, self, and interpersonal regulation and effectiveness in functioning in important life roles (e.g., work, family, medical, spiritual, etc.).

Assessment of Attachment Styles. Attachment style can be measured with reliable and valid self-report scales (e.g., the Experience in Close Relationships Scale [ECR; Brennan, Clark & Shaver, 1998] or the Relationship Styles Questionnaire [RSQ; Griffin & Bartholomew, 1994]) or with a structured, coded interview-based measure (i.e., the Adult Attachment Interview [AAI; Main, Kaplan & Cassidy, 1985]). Only the RSQ and ECR employ the two-dimensional (i.e., attachment avoidance and attachment anxiety) approach to assessing attachment security preferred by Mikulincer and Shaver (2007) and used in this study's conceptual model. In addition, both the RSQ and ECR conceptualize four attachment styles: insecure-anxious, insecure-avoidant, insecure-disorganized, and secure. The preference for a continuous, dimensional measure stems from Fraley and Walker's (1998) critical review of categorical models of attachment security that demonstrated the significant degree to which categorical measures underestimate individual differences and weaken research findings. Fraley and Spieker (2003) offer further support for the continuous, dimensional (as opposed to categorical) model of attachment security.

The ECR resulted from the factor analysis of all non-redundant items from prior self-report scales, including the RSQ. Of particular benefit to researchers, the ECR can be adapted (via minor editorial changes to scale items) to assess an individual's attachment to a variety of possible attachment figures (Brennan et al., 1998). The ECR was also recently revised using item response theory to better

discriminate across the entire range of the two attachment dimensions (Fraley, Waller & Brennan, 2000).

Caregiving Styles

Bowlby (1969, 1982) conceptualized a broad theory of complementary behavioral systems for mapping individual differences, including, but not limited to, systems for attachment, caregiving, exploration, and sex. While the attachment behavioral system aims to promote personal security and comfort, the caregiving behavioral system aims to respond to the welfare and growth needs of others, and especially dependent, vulnerable others (e.g., children). As we employ an array of behaviors, thoughts, emotions, and other strategies to maintain our felt security, we also employ a cadre of unique strategies to relieve the distress and suffering and help prompt the growth and development of others who are in need.

The strategies we most need to employ to effectively meet the felt security needs of dependent others are comparable to the strategies we also most need from our caregivers to experience felt security: readily available, sensitive, responsive and effective sources of support through difficult times. This is very similar to the concept behind the Golden Rule. We need a safe haven and a secure base for our growth and protection, and those who are dependent on us also need for us to be an equally safe haven and secure base for their growth and protection. Effective sources of support also take in many of the posited components of a prosocial personality, including empathic concern, perspective taking, a sense of caregiving

responsibility, an ability to manage one's distress while caregiving, self-efficacy as a caregiver, and a willingness to help (Mikulincer & Shaver, 2007).

Just as we develop and employ conscious and unconscious schemas or internal working models that drive our attachment behavior, we also develop and employ comparable, but not identical, models that guide our caregiving behavior. While attachment schemes justify the strategies we employ with regard to our proximity to and reliance on others and the means we use to achieve our felt security, the complimentary caregiving schemes we hold justify the strategies we employ with regard to our typical sensitivity and responsiveness to the needs of others. These caregiving models include considerations of the self as a caregiver and others as individuals with needs (Reizer & Mikulincer, 2007). Just as one's dispositional or chronic attachment style is most evidenced when distressed and in need, one's dispositional caregiving style is most evidenced when a dependent other is distressed and in need.

Caregiving styles can be distinguished along the same dimensions used to assess attachment styles: avoidance and anxiety. Secure caregivers demonstrate low caregiving anxiety and low caregiving avoidance (Mikulincer & Shaver, 2007). They hold positive working models of their worth and competence as a caregiver. Moreover, they hold positive working models of the worth and dignity of others who are in need. These beliefs are supported by a reliance on effective emotional regulation and constructive problem solving strategies when helping others in need.

Caregiving behaviors marked by heightened caregiving anxiety are exaggerations of caregiving strategies and may be perceived by others as intrusive,

poorly timed, effortful, and motivated by a need for approval (or fear of rejection). While individuals with heightened attachment anxiety are chronically hypersensitive to and exacerbate personal threats, individuals with heightened caregiving anxiety are hypersensitive to cues that others are in need of help. In addition, anxious caregivers chronically doubt their ability to effectively care for needy others and persistently believe that dependent others will perceive them as unavailable, insensitive and unresponsive. Ironically, then, hyperactivated caregivers will appear to others to be more intent on resolving personal distress than resolving the distress of others. This tendency is especially apparent to others over time (Mikulincer & Shaver, 2007).

Caregiving-deactivating behaviors marked by heightened caregiving avoidance are inhibitions of caregiving strategies and serve to deny and dismiss the needs of others (i.e., to dispute that there is actually any need to offer help in the first place). Avoidant caregivers suppress, minimize and deny others' needs. Individuals with inhibited caregiving strategies may therefore appear insensitive, distant, inconsiderate and nonresponsive to others. When those with heightened caregiving avoidance are compelled to offer help, it is often not heartfelt or empathic, and may be associated with cynicism, a belief that the needy other deserves their suffering, and/or an egoistic or selfish motive. Individuals with both heightened caregiving avoidance and heightened caregiving anxiety include a complex, chaotic at times, mix of both inhibitions and exaggerations of caregiving strategies implemented in a haphazard, confused and chaotic manner (Mikulincer & Shaver, 2007).

Assessment of Caregiving Styles. Recently, Shaver, Mikulincer, and Shemesh-Iron (2010) created the first assessment instrument, the Caregiving System Scale (CSS), specifically designed to measure caregiving styles along the two dimensions of avoidance and anxiety. Shaver et al. (2010) created the scale with the hope of better understanding and mapping the caregiving behavioral system. The CSS is comparable to the continuous, dimensional attachment style self-report measure, the ECR.

Prior to the recent development of the CSS, only a few studies addressed the caregiving system, and these studies did not employ the two-dimensional (i.e., anxious, avoidant) model when assessing caregiving. For example, Reizer and Mikulincer (2007) developed the Mental Representation of Caregiving Scale (MRC) to evaluate caregiving attitudes across diverse relational and societal contexts. The MRC assesses five dimensions: (1) perceived ability to recognize others' need, (2) perceived ability to provide help, (3) appraisal of others as worthy of help, (4) egoistic motives for helping, and (5) altruistic motives for helping. Using the MRC, Reizer and Mikulincer (2007) offered evidence to substantiate the descriptions of the caregiving attitudes of individuals with attachment anxiety and attachment avoidance. Attachment avoidance was significantly, negatively correlated with the ability to recognize others in need ($r = -.27, p < .01$), the ability to provide help ($r = -.23, p < .01$), and the appraisal of others as worthy ($r = -.18, p < .05$). Attachment anxiety was significantly negatively related to the ability to recognize others in need ($r = -.16, p < .05$).

The MRC expanded on a prior instrument developed by Kunce and Shaver (1994) that focused exclusively on caregiving attitudes in adult romantic relationships and assessed four attitudinal dimensions: (1) proximity maintenance to a needy partner, (2) sensitivity to a partner's signals and needs, (3) controlling or domineering caregiving, and (4) compulsive caregiving. Shaver et al. (2010) adapted items from the Kunce and Shaver (1994) caregiving assessment for use in the CSS.

Relationship Between Attachment Styles and Caregiving Styles

Much of the justification for the proposed relationship between attachment styles and caregiving styles in the conceptual model proposed and tested in this study (Figure 1.1) is theoretical in nature. However, a few studies do offer evidence in support of the proposed paths between attachment security and caregiving security. Figure 2.1 shows only the attachment and caregiving paths evaluated in this section.

Theoretically, individuals are impacted by the caregiving they receive from others far before they have the opportunity to impact others as a caregiver themselves. Hence, attachment security is identified in the proposed model as the ultimate antecedent construct that has a direct influence on caregiving, the attachment system posited to be more directly relevant to prosocial behavior.

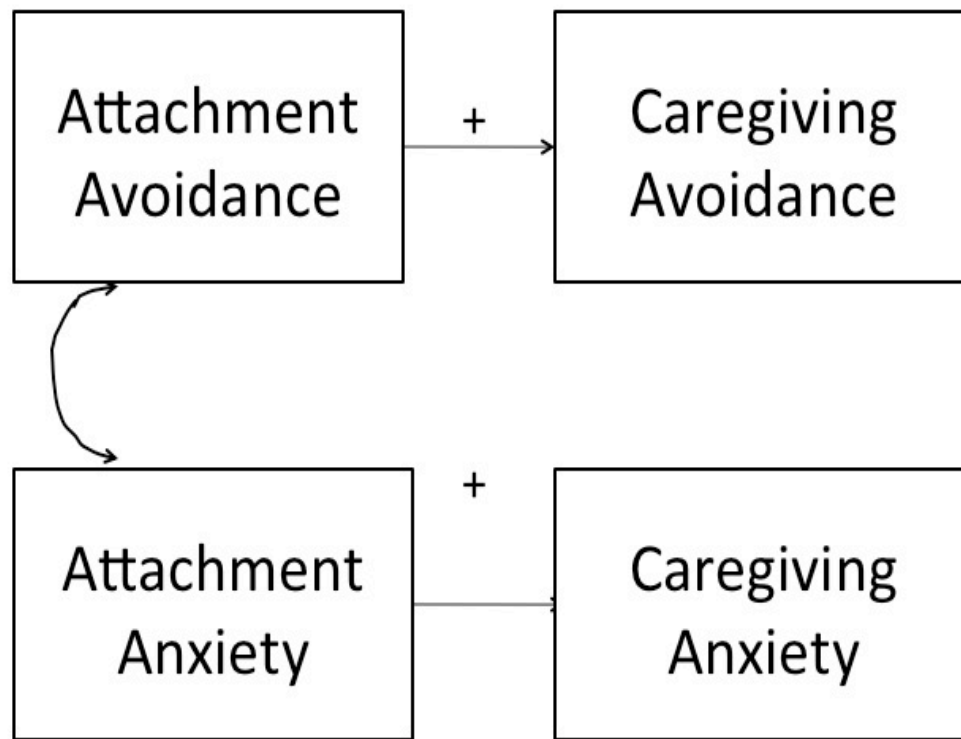


Figure 2.1. Proposed relationship between attachment and caregiving security.

Securely attached individuals, it is argued, have had numerous opportunities to learn, via the responsive and sensitive caregiving of stronger, wiser others (e.g., parents, other family, teachers), to hold healthy, positive working models of self and others (Bowlby, 1969, 1982). Later, as caregivers themselves, it is easier for secure individuals to transfer the healthy models of self and others as a competent recipient of care to the models of one's self as a competent giver of care and of others as worthy of care. In essence, a secure caregiver teaches caregiving by example and a secure attachment style makes secure caregiving possible. Having

reliably experienced a safe haven and secure base from stronger, wiser caregivers, the securely attached individual has gained the healthy beliefs, expectations, and attitudes, as well as the requisite emotional, self- and interpersonal regulation skills necessary to give competent and loving care (Mikulincer & Shaver, 2007).

Bowlby (1969, 1982) noted that activation of one behavioral system (e.g., attachment) was likely to interfere with activation of other behavioral systems (e.g., caregiving). The individual with a hyperactivated, anxious attachment style, who holds an inflated, approving model of others and a harsh, disapproving model of self, may engage in intrusive, compulsive, effortful, and poorly timed caregiving precisely because their ultimate focus is the resolution of their distress and the approval of the caregiver. The anxiously attached caregiver is hypersensitive to personal threats and perceives the distress of a dependent other as another unsettling opportunity for painful rejection and shame-confirming disapproval from valued others.

Likewise, the individual with an inhibited, avoidant attachment style, who holds an inflated, approving model of self and a harsh, disapproving model of others, may engage in little or no caregiving behavior because they don't recognize others' needs or they belittle, deny, or minimize the needs of others. When they do offer care, it is likely to be perceived as insensitive, absent, half-hearted, and nonresponsive. To the individual with an avoidant attachment, who has learned to be compulsively self-reliant, needy others simply must learn to be self-reliant too.

In the only direct assessment of the relationship between the two dimensions (attachment and avoidance) of attachment security and caregiving security, Shaver et al. (2010) detected a significant positive correlation between

attachment avoidance and caregiving avoidance ($r = .43, p < .01$) and a significant positive correlation between attachment anxiety and caregiving anxiety ($r = .46, p < .01$). As expected, there were no significant correlations between the two caregiving dimensions (i.e., the dimensions appear orthogonal as theoretically posited).

While only one study has directly addresses the influence of attachment security on caregiving security using the two-dimensional model of security, numerous studies have addressed the link between attachment security and caregiving behaviors. Most of this research has focused on the link between dispositional or contextually induced attachment security and caregiving behaviors among parents (and their children), relationship partners (both married and not married), and families. Later, in discussions that justify the proposed relationships between caregiving styles and prosocial personality and behavior, further relevant research involving the link between attachment and caregiving behaviors in non-family and non-romantic relationships is described.

Several studies have confirmed a meaningful correlation between the attachment security of parents (too often only mothers) and the quality of caregiving attitudes and behaviors toward their children. For example, research has shown that secure parents are more responsive to their children's distress calls (Belsky, Rovine & Taylor, 1984) and less likely to engage in child neglect and maltreatment (Cohn, Cowan, Cowan & Pearson, 1992). Moreover, secure parents express more warmth and affection (Crittenden, Partridge & Cluaussen, 1991; Crowell & Feldman, 1988) and are more emotionally attuned to their children

(particularly to their negative affect; Haft & Slade, 1989). Secure parents also offer more instrumental and emotional support during problem solving interactions (Rholes, Simpson & Blakely, 1995). Overall, secure parents are better teachers, engage in more goal-directed partnerships with their children, and help children develop a key prerequisite for moral courage – a basic trust in their own and significant others capacities for coping with distress and difficulty. This courage is represented in part by the helpfulness component of the prosocial personality included in the proposed structural model.

One compelling self-report study (Rholes, Simpson, Blakely, Lanigan & Allen, 1997) examined the perceptions of college students who were not parents regarding their desire to have children, parental self-efficacy, child-rearing expectations, and expected satisfaction (in the future) from caring for their own children. Insecurely attached students suggested they would be parents who expressed less warmth and greater aggravation with their children and choose (perhaps as a result) stricter disciplinary approaches. Consistent with the proposed paths between caregiving style and components of the prosocial personality dimension of helpfulness (to be further discussed later), students with heightened attachment avoidance also expressed less confidence in their parenting abilities, a lower desire to have and care for children, and expectations of being dissatisfied caregivers. Students with heightened attachment anxiety also suspected they would have greater difficulties related to children.

In addition to predicting the caregiving behaviors of parents, attachment security also reliably predicts caregiving behaviors among people in romantic and

marital relationships in theoretically consistent ways using both self-report and observational measures. For example, secure relationship partners are more sensitive to their partner's needs, more cooperative, and more emotionally supportive (Kunce & Shaver, 1994).

In a series of intriguing studies, researchers videotaped the behavior of relationship partners as they waited for their partners to perform a stressful task (e.g., give a videotaped presentation) (Feeney & Collins, 2001; Simpson, Rholes & Nelligan, 1992; Rholes, Simpson & Orina, 1999; and Simpson, Rholes, Orina & Grich, 2002). Secure partners offered more comfort and reassurance, expressed more warmth, and responded more effectively (emotionally and instrumentally) to the needs of their partners.

Collins and Feeney (2000) also found that relationship partners with heightened attachment anxiety provided less instrumental support, were less responsive, and engaged in more negative caregiving behaviors toward their partners engaged in a distressing task (i.e., discussing a personal problem with their partner). Moreover, consistent with predicted relationships between caregiving security and other-oriented empathy (a component of the prosocial personality), securely attached relationship partners were more competent at gauging their partner's emotional and instrumental support needs, while insecure caregivers relied on their partner's direct and clear requests for support.

A recent study (Kahadourian, Fincham & Davila, 2004) also demonstrates a greater willingness among secure relationship partners to forgive transgressions. Partners with heightened attachment avoidance were less likely to forgive

transgressions and more likely to report severe narcissistic wounds, while partners with heightened attachment anxiety expressed greater ambivalence and less genuine attempts at forgiveness, largely because of recurrent intrusive thoughts and doubts that interfered with their own self-worth and their fear of depending upon and trusting their partners (particularly when distressed). Another recent study (Lawler-Row, Younger, Piferi, & Jones, 2006) found comparable results: securely attached partners possessed higher levels of trait and situational forgiveness (as well as faster blood pressure recovery after discussing a betrayal event).

Research has also provided evidence of an association between attachment security and perpetration of abuse in love relationship among clinical and non-clinical heterosexual and homosexual couples. Holtzworth-Munroe, Stuart and Hutchinson (1997), for example, found that violent men were less likely to be secure and more likely to express heightened attachment anxiety. Husbands with heightened attachment anxiety were particularly likely to engage in violence in response to their partner's attempt to withdraw from conflict. Attachment anxiety has been shown to predict both the receipt of and the perpetration of psychological and physical abuse (Henderson, Bartholomew, Trinke & Kwong, 2005).

Two studies addressed caregiving within families but outside of the parenting and romantic relationship context. Sorensen, Webster and Roggman (2002) examined the relationship between attachment security and the attitudes of middle-aged adults and caring for older relatives. Secure adults expressed greater preparedness to care for their older family members and were more satisfied with family discussions and planning about care. The generalizability of this study may

be impacted by a relatively restricted sample: the sample was 83% female and 97% Mormon. In a related study, however, Markiewicz, Reis and Gold (1997) found that family members high in attachment avoidance were more likely to suggest that a family member with dementia be institutionalized.

In summary, the relationship between attachment security and caregiving security (and associated behaviors) has strong theoretical and empirical support. The proposed model emphasizes the role of caregiving security on later constructs hypothesized to be linked to prosocial behavior, including values and prosocial behavior. However, attachment security remains the foundation or bedrock construct in the model because of its profound impact on the way we think, feel, and behave as a caregiver. One's success employing a moral principle like the Golden Rule appears, in the end, to depend at least in part on a secure attachment.

Values

Schwartz (1992, 1994, 2006, 2010) has systematically proposed, modified and studied a comprehensive model of basic, universal values over the last two decades. According to Schwartz, values are beliefs about what is good, justified, or worth doing that are linked inextricably to affect and reflect desirable long-term, transcendent goals and action. Particularly vital in Schwartz' model is the relative importance of competing values and their impact on behavior, including prosocial behavior.

Schwartz defines and orders 10 broad values including: conformity, tradition, benevolence, universalism, self-direction, stimulation, hedonism, achievement,

power, and security. These 10 values are organized within a circle such that the closer any values are to each other, the more similar their underlying motivation (see Figure 2.2). Along the motivational continuum, the values are subsumed within two opposing dimensions: *self-enhancement vs. self-transcendence*, and *openness to change vs. conservation*. More than 200 samples involving research participants across more than 81 countries offer substantial support for the inclusive, cross-cultural nature and structure of the values model (Schwartz, 1994; Schwartz, 2007; Schwartz & Bardi, 2001; Schwartz & Belsky, 1987, 1990; Schwartz & Boehnke, 2004; Schwartz, Melech, Lehmann, Burgess, Harris & Owens, 2001; Schwartz & Sagiv, 1995).

The structure of the values model has implications for the current research because the values most relevant to moral and prosocial behavior, according to Schwartz (2010), are benevolence and universalism. These self-transcendent values directly oppose the self-enhancement values of power and achievement. This opposition in values highlights the conflict between a concern for the welfare of others and a concern for the self, particularly social superiority over others. This conflict seems especially relevant to the ability to engage in prosocial behavior consistent with the Golden Rule.

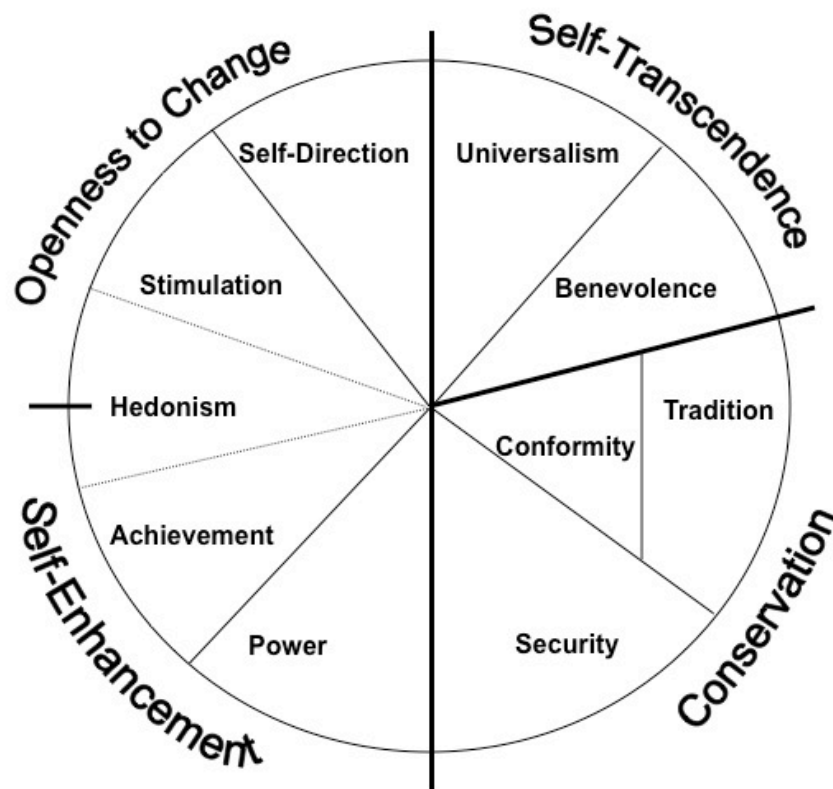


Figure 2.2. The Schwartz (1992) values model.

Assessment of Values

Two scales are available to assess values against the Schwartz (1992) model:

1) the Schwartz Value Survey (SVS, Schwartz, 1992) and 2) the Portrait Values Questionnaire (PVQ, Schwartz, Melech, et al., 2001). The SVS has been used most frequently in research. The SVS is the original instrument, but was revised to form the PVQ in order to offer a more concrete, less cognitively complex, and distinctive (alternative) assessment method to complement the SVS. While the SVS asks respondents to rate the importance of each of 57 single value items linked to the 10

value types, the PVQ asks respondents to report how similar they are to someone with particular goals and aspirations consistent with each of the 10 value types.

Relationship Between Caregiving Security and Values

Unfortunately, as noted by Schwartz (2008, 2010), the relationship between values and moral constructs, like prosocial behavior, empathy and other personality characteristics consistent with the Golden Rule, has received little research attention. However, both theoretical rationale and relevant research, albeit limited, support the paths proposed between values and caregiving security in the conceptual model to be tested in this research (see Figure 1.1). To draw attention to the relationships proposed relevant to values, the paths are isolated for caregiving security in Figure 2.3.

Schwartz (1992) suggested that the interrelatedness of value priorities has two implications for generating research hypotheses about values: 1) the relationship between any outside variable and values will be more similar the closer the values are within the model, and 2) associations between values and any outside variable decrease monotonically as one moves around the values model in both directions from the most positively associated value to the least positively associated value. Schwartz (1992) further asserts that the logic of the values organization and the two implications above results in the relationship between an outside variable and the 10 values being represented graphically as a sinusoid curve in which directly opposing values have opposing relationships with the outside variable. The purported sinusoid curve would suggest that given the proposed

model's prediction that caregiving security is positively associated with self-transcendence values, then it would be theoretically consistent with the Schwartz (1992) model to purport that caregiving insecurity would be least (or inversely) associated with the values directly opposed to self-transcendence (i.e., self-enhancement values).

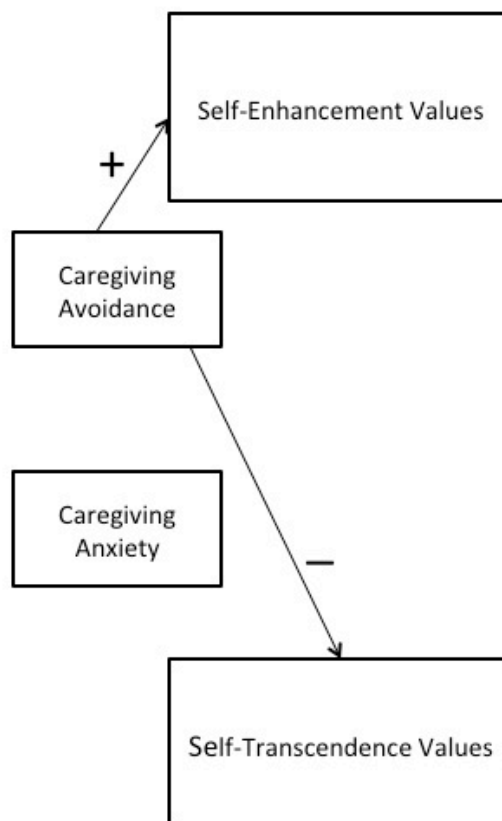


Figure 2.3. Proposed paths between caregiving security and values.

Of course, as Schwartz (1992) suggests, theory building and not simply the assumption of a sinusoid curve, should guide research. In the present study, attachment theory offers strong support for the proposed relations between self-

transcendent and self-enhancement values and caregiving security. The behavior and working models associated with caregiving insecurity are inherently selfish and directed at maintaining own felt security with hyperactive (anxious) or inhibited (avoidant) strategies. The insecure individual's self-enhancement (as opposed to self-transcendence) strategies are adaptive in the short-run because the perception of security is critical to his or her immediate well-being.

The self-focused nature of caregiving strategies is especially apparent with the avoidant caregiver who actively denies, dismisses, and ignores others' needs. Hence, not only is it proposed that caregiving avoidance will be positively associated with self-enhancement values, but it is also proposed that the avoidant caregivers cynicism, insensitivity, and non-responsiveness to needy others will result in an inverse relationship between caregiving avoidance and self-transcendence values.

The self-focused nature of the anxious caregiver is more nuanced. The working model and caregiving strategies of the anxious caregiver would suggest to an observer that caregiving anxiety might (like avoidance) also be inversely associated with self-transcendence values and positively associated with self-enhancement values. However, taking the perspective of an anxious caregiver who is self-reporting their caregiving-relevant thoughts and behaviors, it appears more likely that the anxious caregiver would, like the secure caregiver, deny an endorsement of self-enhancement values and instead endorse self-transcendent values. However, given that secure caregivers (i.e., individuals with lower caregiving anxiety and caregiving avoidance) are expected to also endorse self-enhancement values and deny self-transcendent values, it is likely that there will ultimately be no

discernable relationship between caregiving anxiety and self-transcendence or self-enhancement values. In essence, the anxious caregiver will deny their selfishness as one of many strategies aimed at securing the approval of others (and increasing their felt security).

Two empirical studies offer support for the proposed paths in this study. Mikulincer, Gillath, Sapir-Lavid, Yaakobi, Arias, Tal-Aloni, and Bor (2003) conducted three experimental studies that demonstrated that contextually induced (primed) attachment security was associated with greater endorsement of self-transcendence values by self-report and by spontaneously generated narratives in which research participants reflected on their most important values. Furthermore, dispositional attachment avoidance (measured using the ECR) was also significantly negatively associated with the endorsement of self-transcendence values. Consistent with the proposed model in this study, attachment anxiety was not significantly related to the endorsement of self-transcendence values.

A more recent study (Shaver et al., 2010) reports correlational evidence across five studies in support of the proposed paths between caregiving security and values in this study, including an inverse correlation among caregiving avoidance (measured using the CSS) and benevolence ($r = -.38, p < .01$) and universalism ($r = -.41, p < .01$). Consistent with expectations in the current study, the relationships between caregiving anxiety and self-enhancement values (benevolence and universalism) were not statistically significant. In addition, Shaver et al. (2010) report a positive relationship between caregiving avoidance and cynicism ($r = .44, p < .01$), as well as an inverse relationship between caregiving

avoidance and esteem for humanity ($r = -.45, p < .01$), compassionate love toward strangers ($r = -.41, p < .01$), and compassionate love toward close persons ($r = -.52, p < .01$). As expected by the proposed model in this study, the correlations between caregiving anxiety and these variables are not statistically significant. Unfortunately, Mikulincer et al. (2003) and Shaver et al. (2010) did not assess the relationship between attachment security and self-enhancement values.

Prosocial Personality

Personality, the typical way we think, feel, and behave, is a central construct in psychology. Certainly, we have all engaged with individuals whom we thought of as especially prosocial – people who embody (at least more than most others) the aim of moral principles like the Golden Rule. These are people who have “an enduring tendency to think about the welfare and rights of other people, to feel concern and empathy for them, and to act in a way that benefits them” (Penner & Finkelstein, 1998, p. 526). More recently, Penner and Orum (2010, p. 55) referred to individuals purported to possess a stable, prosocial disposition as embodying an “enduring goodness” not motivated by selfish desires.

Recently, two streams of research offer compelling evidence for the existence of a prosocial personality (Bierhoff, 2002; Dovidio & Penner, 2001). The first stream involves critical analyses, naturalistic, correlational, and laboratory studies that mine the personality differences between individuals who are particularly helpful in real life and simulated crises (sometimes at great personal expense) and those who are not. The second stream involves longitudinal studies that show the stability

of prosocial characteristics and behavior among certain people over time. In the current study, prosocial personality is conceptualized as a significant mediator through which attachment and caregiving security and values impact one's choice to engage in prosocial behavior.

The specific traits that are considered to comprise the prosocial personality vary, but often include most, if not all, of these characteristics: a high sense of social responsibility (i.e., an obligation to attend to and care for the needs of others), an internal locus of control (i.e., a sense of personal agency, self-efficacy, and assertiveness), a belief in a just and fair world (i.e., the absence of cynicism about the world and others), a strong sense of affective and cognitive empathy (i.e., the ability to understand the affect and thoughts of others in need), high tolerance or acceptance of others, high autonomy, and a willingness to take risks (Bierhoff, 2002; Bierhoff, Klein, & Kramp, 1991; Dovidio, Piliavin, Schroeder & Penner, 2006; Midlarsky, Jones & Corley, 2005; Penner & Orum, 2010).

The evidence for these characteristics comes from a wealth of research conducted over the last 40 years. For example, Staub (1974), in one of the earliest laboratory studies of the link between personality traits and prosocial behavior, created an experimental situation where research participants could choose, if they wished, to help a research confederate feigning stomach problems. He found a positive relationship between helping behaviors and social responsibility and moral reasoning, and an inverse relationship between helping and Machiavellianism, the view that any means however unscrupulous can justifiably be used to achieve power. Similarly, Schwartz and Clausen (1970) and Schwartz and Ben David (1976)

detected a positive relationship between social responsibility and helpfulness in investigations of individuals who chose to help in emergency situations.

Oliner and Oliner (1988) pioneered worldwide interest in research on the prosocial personality by mining the dispositions of individuals who at grave personal risk chose to rescue Jews during the Holocaust against matched control individuals who chose not to rescue Jews. Rescuers were significantly more likely to have a high sense of social responsibility, an internal locus of control, a deep and enduring capability to empathize, and values consistent with care. As indirect support of the role of attachment security and helping, Oliner reported that rescuers also reported feeling closer to their mothers and having received more social support from their family than non-rescuers. Other naturalistic research of helping within the Holocaust environment offers support to Oliner's findings (e.g., Fogelman, 1994; London, 1970; Paldiel, 1993). Midlarsky et al. (2005) recently used discriminant function analysis to explore whether self-report measures of locus of control, autonomy, risk taking, social responsibility, tolerance, authoritarianism, empathy, and altruistic moral reasoning could correctly distinguish between non-Jewish heroes of the Holocaust, bystanders, and European immigrants who left Germany prior to World War II. The prosocial personality variables correctly classified 93% of the heroic rescuers from the bystanders and pre-war immigrants who left the country. Bierhoff et al. (1991) found comparable personality trait differences in internal locus of control, belief in a just world, social responsibility, and empathy when comparing individuals who intervened to help victims of traffic accidents to matched control participants.

Longitudinal research also offers support for the existence of a prosocial personality. For example, Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou and Carlo (2002) report substantial consistency in prosocial personality dispositions (as reported by self and friends) over five years. In a previous longitudinal study, Eisenberg, Guthrie, Murphy, Shepard, Cumberland and Carlo (1999) also found evidence that helping in early childhood was significantly related to helping behavior in adolescence and young adulthood.

Assessment of the Prosocial Personality

Up until the recent development of the Prosocial Personality Battery (PSB) (Penner et al., 1995), much of the research that explored and assessed the components of a prosocial personality employed a combination of multiple scales of individual traits. For example, in studies of the prosocial personality, researchers have often used the Interpersonal Reactivity Index (IRI, Davis, 1980) to assess empathy and the Ascription of Responsibility Scale (ARS, Schwartz & Howard, 1982) to assess social responsibility. The development of the PSB was intentionally aimed at gathering, reviewing, and synthesizing all of the personality measures that reliably predicted prosocial behavior, including the IRI and ARS, to better understand the structure of the prosocial personality and to create a single, comprehensive, empirically predictive and meaningful prosocial personality measure. Items were selected from candidate scales that had the highest positive correlation with a measure of helping, along with the highest negative correlation with a measure of selfishness. Moreover, some items were selected from a measure of self-reported helping behavior, the Self-Report Altruism Scale (SRAS, Rushton,

Chrisjohn & Fekken, 1981). It is no surprise, then, that the PSB is significantly correlated with prosocial behavior (Penner et al., 1995).

A factor analysis of the final 56-item PSB (Penner & Craiger, 1991) offers evidence for the two factor solution represented in the conceptual model (Figure 1): (1) other-oriented empathy and (2) helpfulness. *Other-oriented empathy* appears to primarily assess the way individuals think and feel about helping. Individuals who score high on other-oriented empathy tend to be empathic (both affectively and cognitively) and espouse a high sense of social responsibility. *Helpfulness*, on the other hand, appears to primarily assess the way individuals behave in helping situations. Individual who score high on helpfulness are unlikely to report personal distress when helping others and tend to report a history of helping behavior. Furthermore, an individual's helpfulness is positively associated with a sense of personal agency and self-efficacy as a helper (Penner et al., 1995).

The PSB is the only comprehensive scale currently available to directly assess the prosocial personality and has been used by researchers across several studies (Penner & Orom, 2010). Moreover, at the conceptual level, the two factors of the PSB incorporate the array of personality traits shown empirically in prior research to comprise the prosocial personality (Penner, Dovidio, Piliavin & Schroeder, 2005). This is certainly an artifact, however, of the way the scale incorporates the most predictive items from a number of scales used in prior research on prosocial behavior.

Prosocial Behavior

According to Bierhoff (2002), prosocial behavior is comprised of two fundamental types of behavior: 1) helping and 2) altruism. While *helping* is an intentional action that benefits another individual, *altruism* represents a subset of helping behavior that is motivated solely to benefit others without reward or personal benefit. Given the difficulty of accurately assessing the motives of another's prosocial behavior, the current study (and much of the research on prosocial behavior) focuses on the more general category of helping. Batson (2010) describes the kind of rigorous program of experimental (as opposed to the current correlational) research that is required to carefully distinguish between altruistic and helping (or what he calls egoistic helping).

Penner et al. (2005) outline the broad and diverse nature of prosocial behavior and suggest three levels of analysis: 1) meso, or the study of helpers and recipients in the context of a specific situation; 2) micro, or the study of the origins of and individual differences in prosocial tendencies; and 3) macro, or the study of prosocial behavior within the context of groups or organizations. The current study assesses prosocial behavior at the micro level and aims to better understand the role that attachment security, caregiving security, self-enhancement and self-transcendence values, and the prosocial personality may have in explaining and predicting the prosocial behavior of individuals.

Assessment of Prosocial Behavior

Existing measures of prosocial behavior at the micro level are typically either: 1) global or generic to allow participants to assess prosocial tendencies for a number of behaviors, contexts, and motives; or 2) prosocial behaviors measuring specific behaviors in specific contexts (e.g., picking up dropped items, donating blood) (Carlo & Randall, 2002). An example of a global measure includes the Self-Reported Altruism Scale (SRAS; Rushton et al., 1981), which was used in the development of the PPB. The SRAS asks respondents to indicate the frequency with which they have ever performed a variety of prosocial acts (e.g., donated clothes to a charity).

A more recent multi-dimensional measure of global prosocial behavior, the Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002), assesses the degree to which individuals self-report engaging in six types of prosocial behavior: 1) public (i.e., helping others in front of an audience); 2) anonymous (i.e., helping others who are not aware of the identity of the helper); 3) dire (i.e., helping others in crisis or emergency situations); 4) emotional (i.e., helping others who are in emotionally evocative circumstances); 5) compliant (i.e., helping others when it is requested); and 6) altruistic (i.e., helping motivated primarily by concern for other, particularly sympathy and internalized norms and principles). The PTM total score is significantly related to scores on the SRAS, though the SRAS was not significantly related to scores on the altruistic, emotional, or public dimensions of the PTM (Carlo & Randall, 2010). Relationship Between Caregiving Security and Prosocial Personality and Behavior

Figure 2.4 shows the paths proposed in this study between caregiving security and the prosocial personality and behavior. Specifically, caregiving avoidance is proposed to have an inverse relationship with both factors of the prosocial personality (other-oriented empathy and helpfulness), while caregiving anxiety is expected to have an inverse relationship with helpfulness.

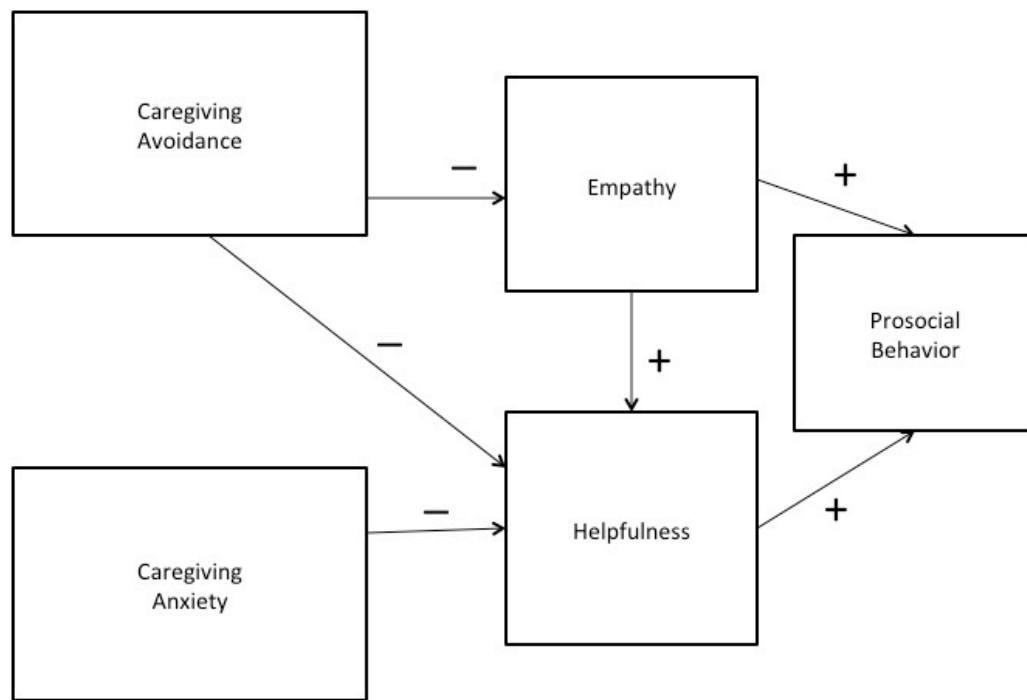


Figure 2.4. Proposed paths between caregiving security, prosocial personality and behavior.

The proposed relationships between caregiving security and the prosocial personality are consistent with attachment theory. In fact, the dimensions of the prosocial personality – other-oriented empathy and helpfulness – include specific

characteristics that the secure caregiver has learned to incorporate into his or her personality from life experiences with a secure caregiver (and the attachment security it fostered).

An inverse relationship between caregiving avoidance and both dimensions of the prosocial personality is theoretically consistent with attachment theory. With regard to other-oriented empathy, the avoidant caregiver typically disregards the mental life of others and instead predominantly focuses on his or her needs. Hence, even if the avoidant caregiver were to possess the capabilities to take another's perspective and empathize, he or she will most likely not be motivated to employ them in daily life.

In addition, the working model of the avoidant caregiver, a predominantly positive view of self and a predominantly negative view of others, will further contribute to decreased motives to engage in perspective taking, to empathize, and to ascribe personal responsibility for the care of needy others. Instead, the avoidant caregiver is likely to be cynical and actively dispute the notion that others are in fact worthy of need. The avoidant caregiver is expected to endorse an unjust, dog-eat-dog world where only the tough and self-reliant survive. To the avoidant caregiver, asking for help (and in turn giving it) are both signs of weakness.

Moreover, examining the avoidant caregiver against the helpfulness dimension of the prosocial personality, it is theoretically unlikely that the avoidant caregiver would self-identify helping as part of his or her identity or cadre of typical behaviors. Instead, the identity of the avoidant caregiver is deeply seated in compulsive self-reliance, and, as conceptualized in the current study, values of self-

enhancement (as opposed to self-transcendence). In addition, the avoidant caregiver avoids distress precisely because he or she chooses not to endorse helpfulness as a way of behaving. By not engaging meaningfully with others, the avoidant caregiver minimizes the potential for painful encounters not unlike those they encountered as a receiver of nonresponsive, insensitive care.

With respect to the anxious caregiver, an inverse relationship between caregiving anxiety and helpfulness also appears theoretically consistent. Caregiving insecurity will likely lead an individual to report feeling particularly distressed when around needy others and not believing him or herself to be particularly self-efficacious as a caregiver. However, the intrusive, compulsive, and at times, controlling nature of the anxious caregiver's helping behavior would likely justify the anxious caregiver's tendency to self-report that they indeed are typically empathic, take the perspective of others, and assume responsibility for the concerns and welfare of others. Hence, the lack of a proposed relationship between anxious caregiving and other-oriented empathy is principally based on the self-report bias of the anxious caregiver. In an observational or other-report study, it is more likely that the relationship between the other-oriented dimension and caregiving anxiety would be inverse (and consistent with that of the avoidant caregiver).

Only one study has directly addressed the relationship between caregiving security and the prosocial personality using the two-dimensional model of caregiving. Consistent with the proposed paths in the model evaluated in this study, Shaver et al. (2010) reported a significant, inverse relationship between dispositional caregiving avoidance and both other-oriented empathy ($r = -.33, p$

< .01) and helpfulness ($r = -.37, p < .01$). Shaver et al. also reported that caregiving anxiety was not correlated significantly with other-oriented empathy, but was significantly, inversely correlated with helpfulness ($r = -.32, p < .01$). Shaver et al also reported relationships between caregiving security and other prosocial personality constructs similar to those measured by the PPB. For example, caregiving avoidance was significantly, inversely correlated with these comparable components of other-oriented empathy: emotional empathy ($r = -.50, p < .01$), empathic responses to stories ($r = -.37, p < .01$), and belief in others' deservingness of help ($r = -.30, p < .01$). Caregiving anxiety was not significantly correlated with these variables, but was significantly, inversely correlated with perceived self-efficacy as a caregiver, a component of helpfulness ($r = -.46, p < .01$).

Shaver et al. (2010) also report unpublished, ongoing research that suggests that caregiving security (as measured by the CSS) is related in theoretically consistent ways with parental caregiving behavior, caregiving behavior in couple relationships, and volunteerism. For example, caregiving insecurity (both avoidant and anxious) is associated with not being effectively helpful when helping their children solve challenging puzzles. As they helped their children solve puzzles, avoidant caregivers were also observed to be cold and distant, while anxious caregiver parents were under distress. Similarly, caregiving avoidance and anxiety interfered in theoretically consistent ways with support-giving when couples conversed about personal problems. Moreover, caregiving avoidance and anxiety led to theoretically consistent effects on volunteering, with avoidant caregivers

engaging in less volunteer activity and anxious caregivers engaging in volunteer behavior, but in an anxious, selfish manner.

One recent conference presentation also suggests relationships between attachment security and prosocial personality dimensions consistent with the current study. Using SEM, Gillath and Karantzas (2007) report a significant, inverse relationship between attachment avoidance and both dimensions – other-oriented empathy and helpfulness - of the prosocial personality. Attachment anxiety was only significantly, inversely related with helpfulness. Further analysis suggested that the principal variable impacting the relationship between attachment avoidance and other-oriented empathy is the avoidant caregiver's discomfort with dependence, while two principal variables accounted for the relationship between caregiving anxiety and helpfulness: (1) fear of rejection and abandonment and (2) preoccupation with personal distress.

Significant additional research that explores the relationship between attachment security and prosocial traits outside of the context of parent-child, romantic, and family relationships also offers support for the relationships between attachment security, caregiving security and prosocial personality and behavior posited in this study. For example, securely attached female students were more supportive and reported less distress when asked to engage in a discussion with a confederate researcher who had reportedly been recently diagnosed with cancer (Westmaas & Silver, 2001). Avoidant students were the least supportive, while anxious students offered support, but reported greater distress. In an interesting twist, the researchers also manipulated the perceived attachment security of the

confederate. As predicted, avoidant students were most rejecting of anxiously attached and securely attached confederates, perhaps as a direct means to avoid the triggering of their own distress and as a means of maintaining a grandiose self-image.

In a series of five studies, Mikulincer and Shaver (2001) further demonstrated that subliminally and consciously induced attachment security (as well as chronic attachment anxiety measured by self-report scales) led research participants to engage in greater cognitive openness and express no explicit bias to out-group members, including Israeli Arabs, Russian Jews, and homosexuals. These effects persisted even when out-group members explicitly challenged the worldviews of the research participants. Students primed to experience attachment security expressed none of the in-group/out-group differences evidenced in unprimed groups and groups of participants who experienced positive affect (but attachment irrelevant) primes.

Another series of five studies (Mikulincer, Gillath, Halevy, Avihou, Avidan & Eshkoli, 2001) examined the effects of dispositional and contextually induced attachment security on compassionate responses toward others' suffering. Attachment security was induced in numerous ways, including recalling personal memories, reading relevant stories, looking at relevant pictures, and experiencing subliminal exposure to relevant words (e.g., "love", "hug", "close"). Participants primed to experience attachment security were compared to students primed to experience neutral or positive affect. Across all studies, participants primed to experience attachment security (in contrast to those primed to experience positive

or neutral affect) demonstrated increased compassion and less personal distress in response to the distress of others. Attachment anxiety prompted greater self-preoccupation and distress and were also associated with an awkward form of empathy that led the anxiously attached person to reverse roles and transform from a caregiver to a less compassionate and needy person. Attachment avoidance and anxiety were also inversely related with empathy.

The relationship between attachment security and prosocial behavior has been an increasing focus of recent research. A series of five follow-up studies (Gillath, Shaver, Mikulincer, Nitzberg, Erez & van Ijzendoorn, 2005; Mikulincer, Shaver, Gillath & Nitzberg, 2005) examined the link between self-reported attachment security and volunteer behavior and its motives (i.e., egoistic or altruistic) across a sample of American, Dutch, and Israeli students. As predicted, people with a chronic sense of attachment security reported engaging in greater volunteer activities, for more time, and for more altruistic reasons. Attachment anxiety was not related to engaging in volunteer activities, but was associated with more selfish-reasons (e.g., ego-enhancement, career promotion). Attachment avoidance was associated with less volunteer activity for less altruistic, more egoistic reasons. These findings are consistent with another study (McKinney, 2002) that showed a relationship between adolescent attachment security to parents and involvement in voluntary altruistic activities.

In the most direct experiment to date to address the willingness of people to engage in prosocial behavior, Gillath, Shaver and Mikulincer (2005) report a creative study that addressed the relationship between contextually induced

attachment security (compared to two attachment-unrelated primed conditions) and the willingness of participants to help a distressed confederate student complete aversive tasks (e.g., pet a large, live tarantula) after having already completed other aversive tasks. Both dispositional attachment security and attachment security primed subliminally or consciously were related to increased compassion, decreased personal distress, and greater willingness among students to take the place of the distressed other and pet the tarantula. Distress, measured via autonomic measures, was also highest among students with heightened attachment anxiety. The researchers suggest that further investigations are necessary to address how specific experiences, including psychotherapy, meditation training, and ethics-oriented groups, might impact a person's sense of attachment security and foster greater compassion and altruism. Another compelling study (Wayment, 2006) demonstrated a link between attachment security and reactions to the terrorist attacks of September 11, 2001. Individuals with greater attachment security showed greater empathy to the bereaved and empathy was significantly related to greater helping behavior.

In a recent qualitative study, Mozina (2008) reflected on her own experiences observing young adult volunteers with diverse attachment styles. Consistent with attachment theory, volunteers with heightened attachment anxiety were described as looking for constant support and feedback and clinging to idealized individuals, while volunteers with heightened attachment avoidance are described as holding back emotions except for occasional intense anger outbursts and focusing predominantly on work.

Attachment security also appears to be related to the reasons people give for choosing prosocial careers. For example, insecure college students preparing for careers as kindergarten teachers were more likely to report less altruistic, less prosocial motives for their chosen career. Moreover, less secure occupational therapy students were less likely to say those chose their career to help people (Roney, Meredith & Strong, 2004) and less secure medical students were more apt to choose non-primary care specialties because of the intense and long-term patient-physician relationships required in primary care (Ciechanowski, Russo, Katon & Walker, 2004).

While prosocial personality and behavior and their relationship to attachment and caregiving is the focus of this study, it should be noted that extensive evidence suggests a strong relationship between attachment insecurity and antisocial behavior. In fact, John Bowlby's attachment theory was sparked in great part by his experiences working with antisocial youth (Bowlby, 1944). It is argued that, consistent with attachment theory, antisocial and aggressive behavior is often an expression of the tendency to seek acceptance and support from others under distress using maladaptive strategies. Moreover, individuals who exhibit antisocial behavior often have weak bonds with family, social institutions, and social conventions (van Ijzendoorn, 1997). For a further review of the evidence suggesting a strong link between antisocial behavior and attachment security, see Dozier, Styovall-McClough and Albus (2008). Most of this research implicated attachment avoidance as most strongly related to antisocial behavior.

Overall, there appears to be strong, convincing evidence that attachment security, both as a dispositional measure and as a state that can be contextually induced, can reliably predict (and prompt) prosocial personality characteristics and prosocial behavior. The impact of a sense of attachment security on adherence to principles like the Golden Rule is evidenced not only in close family and love relationships, but also is evidenced in our behavior toward strangers. Moreover, a sense of attachment security not only prompts greater caregiving behavior necessary for reciprocity and mutual respect, but security also appears to prompt greater cognitive openness and exploration necessary to examine moral issues despite competing contextual, emotional, and other forces that impact one's ability to reason with a wise mind.

Despite the wealth of research on these relationships, it is still important to recognize that the vast majority of this research considered only attachment security, not caregiving security, and focused on security as a categorical variable, which significantly reduces the power and restricts the range of reported attachment measures. The current research extends existing research by exploring the relationship between attachment and caregiving security, using continuous dimensional measures, and further exploring the role that attachment and caregiving security have on prosocial values, personality and behavior.

Relationship Between Values and Prosocial Personality and Behavior

Figure 2.5 shows the proposed paths between values and both prosocial personality and behavior. As depicted, it is expected that self-enhancement values will be inversely related to both dimensions of the prosocial personality and to

prosocial behavior. Consistent with Schwartz (1992) model of values, it is expected that self-transcendence values, directly opposed to self-enhancement values in the model, will be positively related to both dimensions of the prosocial personality and to prosocial behavior. Unfortunately, while these posited relationships appear grounded in values theory, there has been almost no empirical research on the relationship between values and prosocial personality and behavior (Dovidio et al., 2006; Schwartz, 2010).

Theoretically, self-transcendence values of benevolence and universalism are entirely consistent with prosocial traits and behaviors. We expect an individual who is benevolent to be empathic and an individual who endorses universalism to possess a high sense of social responsibility and a concern for the welfare of others. Conversely, we expect an individual focused on his or her own needs for achievement and power to be less inclined to consider the thoughts and feelings of others and to emphasize self-reliance and care (as opposed to helping and other-reliance and care). Moreover, the self-transcendent caregiver appears far more likely to endorse helping as an important element of his or her identity and to invest the time and energy necessary to feel efficacious as a helper. As noted earlier, these prosocial dispositions – empathy, social responsibility, identity and self-efficacy – should be consistently related to prosocial behavior.

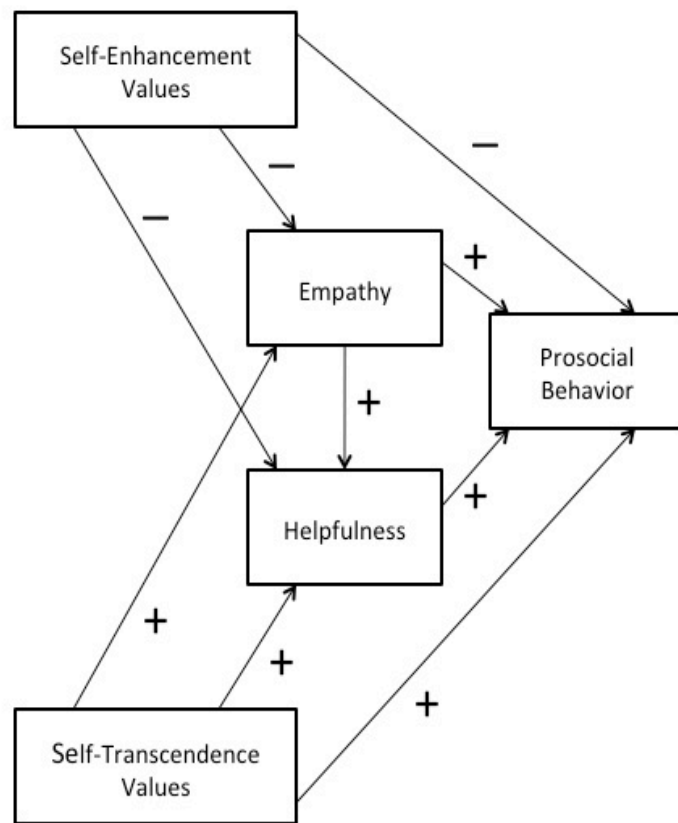


Figure 2.5. Proposed paths between values, prosocial personality and behavior.

Only a few studies, however, have directly examined the relationship between values and prosocial behavior. Hitlin (2003), for example, reported a significant, positive correlation between self-reported benevolence values and an expressed identity as a volunteer, as well as significant, inverse correlations between self-reported achievement and power values and a volunteer identity. Caprara and Steca (2007) also provide evidence that self-transcendence values are positively related with prosocial behavior and that this relationship is mediated in

part by self-report measures of self-efficacy (namely, the extent to which individuals perceive themselves as emotionally and socially intelligent).

In other relevant research, Batson, Eklund, Chermok, Hoyt and Ortiz (2007) manipulated the extent to which individuals considered self-transcendence values and showed that the manipulation impacted, in theoretically consistent ways, how individuals perceived and empathized with others' needs. When individuals were prompted to consider self-transcendence values, they showed a significant increase in self-reported empathy, perspective taking, and helping. Similarly, Silfver, Helkama, Lonnqvist and Verkasalo (2008) demonstrated that self-enhancement values correlated inversely (and self-transcendence values correlated positively) with empathy and perspective taking.

In another relevant study, Schwartz, Sagiv and Boehnke (2000) also demonstrated that self-transcendence values correlated most positively with more global or macro worries (i.e., worries about the world at large like poverty, hunger, and war), while self-enhancement values correlated most negatively with macro worries. Instead, self-enhancement values correlated positively (and self-transcendence values negatively) with personal or micro worries (e.g., worries about one's health, safety, finances, and esteem).

The Full SEM Model in Review

Overall, the current research aims to meet the need for more integrative research on the relationships between constructs shown individually to have meaningful relationships to prosocial behavior, including attachment security,

caregiving security, values, prosocial personality and behavior. The preceding review of relevant research literature summarized the theoretical rationale and empirical support for each of the proposed paths assessed in the conceptual model to be tested in this study (see Figure 1.1 and supporting Figures 2.1, 2.3, 2.4, and 2.5).

Hypotheses

Seven major hypotheses about the nature of the relationships between the attachment security, caregiving security, moral values, prosocial personality, and prosocial behavior constructs are posited in the conceptual model. These proposed relationships are outlined below:

1) *Attachment security will be significantly related with caregiving security.*

Specific hypotheses include: (a) attachment avoidance will be positively related with caregiving avoidance; (b) attachment anxiety will be positively related with caregiving anxiety.

2) *There will be no significant relationship between the two dimensions of caregiving security.* Specifically, caregiving anxiety will not be related with caregiving avoidance.

3) *Caregiving avoidance will be significantly related with moral values.* Specific hypotheses include: (a) caregiving avoidance will be positively related with self-enhancement values; (b) caregiving avoidance will be inversely related with self-transcendence values.

4) *There will be no significant relationship between caregiving anxiety and moral values.* Specific hypotheses include: (a) caregiving anxiety will not be related with self-transcendence values and (b) caregiving anxiety will not be related with self-enhancement values.

5) *Caregiving security will be significantly with prosocial personality.* Specific hypotheses include: (a) caregiving avoidance will be inversely related with other-oriented empathy; (b) caregiving avoidance will be inversely related with helpfulness; (c) caregiving anxiety will be inversely related to helpfulness; and (d) caregiving anxiety will not be related with other-oriented empathy.

6) *Moral values will be significantly related with the prosocial personality and behavior.* Specific hypotheses include: (a) self-enhancement values will be inversely related with other-oriented empathy; (b) self-enhancement values will be inversely related with helpfulness; (c) self-enhancement values will be inversely related with prosocial behavior; (d) self-transcendence values will be positively related with other-oriented empathy; (e) self-transcendence values will be positively related with helpfulness; and (f) self-transcendence values will be positive related with prosocial behavior.

(7) *Prosocial personality dimensions will be significantly related with each other and to prosocial behavior.* Specific hypotheses include: (a) other-oriented empathy will be positively related with helpfulness; (b) other-oriented empathy will be positively related with prosocial behavior; and (c) helpfulness will be positively related with prosocial behavior.

Ultimate Aim of the Current Research

While there is a substantial body of ever growing evidence to support each of these posited relationships, no single study has to date attempted to integrate and test more than just a subset of the relationships at once. Much research evidence, for example, has demonstrated the consistent and meaningful impact that attachment insecurity can have on a variety of prosocial attitudes and behaviors, including those attitudes and behaviors in close romantic partner, parent-child, and family member relationships. However, far less research has attempted to examine potential mediator variables that might help explain just how attachment insecurity comes to influence prosocial behavior in broader social situations consistent with the Golden Rule.

To address this need for greater emphasis on the mechanisms through which attachment style might ultimately contribute to prosocial behavior, the proposed conceptual model includes three potential mediators between the attachment insecurity and prosocial behavior – caregiving styles, morally relevant values, and prosocial personality. Each of these proposed mediator constructs has been the focus of a growing, but still limited, body of research that suggests their unique and important contribution to prosocial behavior. But once again, no research has to date systematically examined the combined impact of these proposed mediator constructs on prosocial behavior.

The current study attempts to bridge the gaps in existing attachment research by examining how attachment styles relate to specific caregiving styles, and how in turn caregiving styles relate to morally relevant values, prosocial

dispositions, and prosocial behavior. The current study, for example, is only the second to purposely assess this relationship using the ECR and CSS and it is the first to do so in the context of an array of other measures (i.e., values, prosocial personality) relevant to understanding prosocial behavior. In addition, the current study is among only a few studies that address the relationship between caregiving styles, values, and prosocial dispositions.

This study, for the first time, will use SEM to assess these relationships in one dynamic statistical model. By better understanding the relationships between key psychological constructs (i.e., attachment security, caregiving security, values and the prosocial personality) and prosocial behavior, this study may help explain the factors that contribute to moral reasoning and behavior consistent with moral principles like the Golden Rule.

CHAPTER 3: METHODOLOGY

Participants

Sample Size and Power

The sample for this study was comprised of 616 volunteer adults recruited during the 2010-11 academic year from the students, faculty, staff, and their families from two Wisconsin technical, two-year colleges (one suburban and one urban). These two campuses offer access to about 25,000 full- and part-time students.

The recruitment and selection of participants was guided by three goals: (1) to include at least the number of participants necessary to achieve 80% power to carry out the planned hypothesis tests (i.e., assess the fit of the proposed structural model); (2) to secure participants motivated to conscientiously complete the self-report assessments necessary to evaluate the proposed structural model; and (3) to identify participants who vary as widely as possible in demographic characteristics as well as the observed variables in the proposed model (i.e., attachment and caregiving styles, values, prosocial personality and prosocial behavior).

To estimate the number of participants necessary to achieve 80% statistical power to test model fit, the Statistical Analysis System (SAS) interval-halving procedure described and advocated by MacCallum, Browne, and Sugawara (1996) was used. This procedure suggests that a minimum of four-hundred ninety (490) participants is necessary to achieve 80% power to detect a not-close fit of the proposed structural model (i.e., with null value of the root-mean-square error of

approximation (RMSEA) at .05, alternative value of RMSEA at .01, $p = .05$, and 19 degrees of freedom). As a safeguard against the potential for participant dropouts and outliers, the ultimate goal was to recruit at least 515 participants or 25 participants beyond the 490 estimated to be required to achieve adequate.

Inclusionary and Exclusionary Criteria

To maximize the potential for securing 515 or more diverse participant volunteers motivated to conscientiously and accurately complete the self-report measures, the principal investigator directly oversaw the administration of data collection efforts at the two technical college campuses from which the participants were recruited. The principal investigator is a full-time instructor at one campus and a part-time instructor at the other campus. Participants were recruited from among the colleges' students, faculty, and staff, as well as their families. As long as the participants were a student, faculty or staff at one of the colleges, or a family member of a student, faculty, or staff, there were no exclusionary criteria for participation in the study.

The use of technical college students, faculty, staff, and their families afforded the opportunity for wide variability in participant demographics, particularly ethnic diversity and age. A number of non-traditional and returning adult students also attend both technical colleges. Moreover, technical college students may pursue a wide variety of possible degrees, including industrial, human service, nursing, business, information technology, culinary arts, law enforcement, fire fighting, truck driving, engineering, and other programs. The faculty and staff, as well as the

families of students, faculty and staff at technical colleges are also representative of a wide range of professional, technical, and vocational careers and educational backgrounds. Finally, the reduced cost of a technical college education attracts a wide range of students across the full spectrum of socioeconomic status and family variables likely to impact attachment experiences, values, and prosocial personality and behavior.

Sample Characteristics

The 616 adult volunteer participants ranged in age from 18 to 94 ($M = 32$, $SD = 15$) and included 358 (58.1%) females and 128 (20.8%) racial/ethnic minorities. The minority participants included 11 (1.8%) Native American, 32 (5.2%) Hispanic/Latina, 59 (9.6%) African American, 19 (3.1%) Asian/Pacific Islander, and 7 (1.1%) other (e.g., multi-ethnic) volunteers. The majority of participants were students (370, 60.1%), while the rest were faculty, staff, or family members of students, faculty, or staff. Moreover, the small majority of participants were from the suburban college (346, 56.2%) and the large majority of the student participants (262, 70.8%) earned extra credit as a result of their participation in the study.

While participation in the study was entirely voluntary and students could have, if they wished, completed an alternative assignment to earn extra credit, the vast majority (80% or more) of students in classes approached about this study agreed to participate. This very high response rate was likely a result of approaching students in the context of their general education courses (e.g., psychology,

sociology, human relations) where the focus on psychological variables like attachment, values, and personality was particularly intriguing.

The sample for this research is more diverse with respect to gender and race/ethnicity than that of the students enrolled across the 16 colleges within the Wisconsin Technical College System (WTCS, 2012). Annual enrollment data from the last 10 academic years (2001-02 through the 2010-11) show that, on average, 50.8% of WTCS students are female and 15.6% are racial/ethnic minorities. The average minority representation across the last 10 academic years for WTCS colleges is 1.3% Native American, 5.5% Hispanic/Latina, 6.3% African American, 2.3% Asian/Pacific Islander, and 0.3% multi-ethnic. For the 2010-11 academic year (the year in which the data were collected for this study), 51% of WTCS students were female and 18.2% were racial/ethnic minorities, including 1.8% Native American, 6.0% Hispanic/Latina, 7.1% African American, 2.7% Asian/Pacific Islander, and 0.6% multi-ethnic.

In addition, the sample for the current research is more diverse with respect to gender and race/ethnicity than that of the state of Wisconsin (United States Census Bureau, 2010). In 2010, the census data show that 50.4% of the Wisconsin population were female and 13.8% were racial/ethnic minorities. In 2010, the Wisconsin population included 1.0% Native Americans, 5.9% Hispanic/Latina, 6.3% African Americans, 2.3% Asian/Pacific Islander, and 1.8% multi-ethnic.

While the convenience sample used in this study includes 616 adults with significant variability across gender, age, occupational status, and racial/ethnic groups, it is a convenience sample. Hence, results from this study cannot be

generalized to other samples and certainly not the general population. Nevertheless, the current study does not aim to confirm point estimates of model parameters, but instead strives to understand and explore model relationships as a whole. For this purpose, the representativeness of the sample is less important.

Instruments

In addition to a brief demographic questionnaire, all participants completed five self-report questionnaires to assess attachment style, caregiving style, values, prosocial personality, and behavior. Each of the assessments used in this study were selected because it was considered the most reliable, valid, and efficient for the purposes of this study.

Demographic Questionnaire

To describe and evaluate the nature of the sample when interpreting and generalizing results, a brief demographic questionnaire was administered. The questionnaire asked participants to record their age, gender, race/ethnicity, role, location, and current level of stress. In addition, the questionnaire asked students to indicate if they would be earning extra credit for their participation in the study.

Attachment Style

Attachment style was assessed using the Experience in Close Relationships (ECR) scale (Brennan et al., 1998), a 36-item self-report questionnaire that assesses the two exogenous variables in the proposed statistical model: (1) attachment

anxiety and (2) attachment avoidance. These two attachment style dimensions resulted from the factor analysis of all non-redundant items from the self-report measures of attachment style that existed prior to the development of the ECR.

Attachment anxiety and attachment avoidance on the ECR are each assessed by 18 items that can be customized to direct participants to focus on specific close relationships or to focus more globally on close relationships in general. In the current study, instructions and items were edited to ask participants to reflect globally on their close relationships with others (e.g., friends, family, romantic partners). For each item, participants indicated their level of agreement with each item using a seven-point scale from *disagree strongly* (1) to *agree strongly* (7). Attachment avoidance, for example, is assessed with items like “*I prefer not to show others how I feel deep down*” and “*I try to avoid getting too close to others.*” Attachment anxiety is assessed with items like “*I worry about being rejected or abandoned*” and “*I worry about being alone.*” Items are arranged such that every other item refers to a common dimension. In addition, 10 of the 36 items are reverse keyed.

Mikulincer and Shaver (2007) outline evidence for the reliability and validity of the ECR across hundreds of studies using a wide variety of cross-cultural samples. For example, estimates of the internal consistency reliability (coefficient alpha) for each of the attachment style dimensions typically approaches or surpasses .90. Test-retest reliability estimates also typically range between .50 to .70, depending on the sample and the amount of time that passes between assessments. An array of research supports the convergent and discriminant

validity of the ECR, including theoretically-consistent changes in scale values in response to experimental manipulations of attachment security and relevant developmental experiences. In addition, theoretically-predictable correlations have been confirmed between attachment measures and relevant behavioral observations, implicit, unconscious processes, narratives about significant others and interpersonal experiences, and a variety of personality and mental health variables. The internal consistency reliability (coefficient alpha) coefficients computed for the attachment avoidance and anxiety dimensions in the current sample are .90 and .92, respectively.

Caregiving Style

Caregiving style was assessed using the Caregiving System Scale (CSS), recently developed by Shaver et al. (2010). The 20-item CSS was specifically constructed using factor analysis to assess the degree to which individuals employ both anxiety (hyperactivation) and avoidance (deactivation) strategies when engaged in caregiving behavior.

Caregiving anxiety and caregiving avoidance are each assessed by 10 self-report items. The CSS instructs participants to think globally about situations where others might need their help and to rate the extent to which each of the 20 items describes their typical caregiving thoughts and behavioral tendencies. Each item is rated using a scale from “not at all” (1) to “very much” (7). Caregiving avoidance is measured by items like: *“When I see people in distress, I don’t feel comfortable jumping in to help”* and *“I don’t invest a lot of energy trying to help others.”*

Caregiving anxiety is measured by items like: *“When I’m unable to help a person who is in distress, I feel worthless”* and *“I sometimes try to help others more than they actually want me to.”*

While the CSS has only been used to date by Shaver et al. (2010) in unpublished studies summarized in a recent edited volume on prosocial behavior, the authors developed the CSS with the hope that it would draw further research attention to the importance of the caregiving system within an attachment theory framework. Shaver et al. offer evidence of the reliability and validity of the CSS. Estimates of the internal consistency reliability (coefficient alpha) coefficients derived from cross-cultural samples from Israel and the US for caregiving avoidance are .87 and .88 and for caregiving anxiety are .81 and .82, respectively. Test-retest reliability estimates of .76 and .72 are also reported for the caregiving anxiety and caregiving avoidance scales, respectively. The authors also report that the CSS self-report scales correlated significantly (about .50) with romantic partner reports of caregiving behavioral tendencies. Moreover, CSS scores are reported to correlate significantly (about .50) with participants’ open-ended accounts of caregiving experiences. Correlations between CSS scales and numerous other measures are also reported as evidence of the convergent and divergent validity of the anxiety and avoidance scales. The internal consistency reliability (coefficient alpha) coefficients computed for the caregiving avoidance and anxiety dimensions in the current sample are .78 and .84, respectively.

Values

The self-enhancement and self-transcendence values variables were assessed using the Portrait Values Questionnaire (PVQ; Schwartz, Melech, et al, 2001). The PVQ is a briefer, more concrete, and less cognitively demanding alternative to the SVS developed to measure the ten values included in the full Schwartz values model (conformity, tradition, benevolence, universalism, self-direction, stimulation, hedonism, achievement, power, and security). The PVQ has been translated into more than 21 languages and employed in research across more than 30 samples and 18 nations (Schwartz, 2003).

The PVQ includes very brief biographical portraits of 40 different people that mirror the conceptual definitions of each of the 10 values. Using simple, concrete language, each portrait describes a person, gender-matched to the participant, with goals, aspirations, or wishes that would suggest the person considers one of the 10 values in the Schwartz model to be important. For example, one portrait (gender matched in this example for males) includes the text: "It is important to him to be rich. He wants to have a lot of money and expensive things." This portrait describes a person who cherishes power, a self-enhancement value. Each of the 40 gender-matched portraits is rated on a six-point scale from "very much like me" (1) to "not like me at all" (6). Of the 40 portraits in the full PVQ, 7 portraits address the self-enhancement values (4 assess achievement, 3 assess power) and 10 portraits address the self-transcendence values (4 assess benevolence, 6 address universalism). The remaining 23 items assess the openness to change and conservation values. While the proposed model tested in the present study included

only the self-enhancement and self-transcendence values, the scores for these variables are based on the relative importance of these values as compared to all categories of values. Hence, participants completed the entire PVQ.

Despite the relative brevity of the self-transcendence and self-enhancement values scales, Schwartz (2003) offers evidence for internal consistency reliability. Coefficient alpha is reported to be .74 and .81 for self-transcendence and self-enhancement values, respectively. In addition, test-retest reliability estimates are reported across two samples to be above .60. Further evidence suggests that the PVQ has theoretically consistent correlations with value priorities and background, personality, attitude and behavior variables in samples across diverse countries. The internal consistency reliability (coefficient alpha) coefficients computed for the self-transcendence and self-enhancement measures for the current sample are .81 and .80, respectively.

Prosocial Personality

Prosocial personality was assessed using the Prosocial Personality Battery (PSB; Penner et al., 1995), which was derived from a factor analysis of items from personality scales previously found to correlate with prosocial thoughts, feelings and behaviors. The PSB contains 56 self-report items that measure two higher-order dimensions of the prosocial personality included in the proposed structural model: (1) other-oriented empathy and (2) helpfulness. Of the 56 PSB items, 37 assess the other-oriented empathy dimension and 19 assess helpfulness. Forty-two of the 56 items ask the participants to rate the extent to which particular prosocial thoughts,

feelings, and behavioral tendencies are descriptive of them using a five-point scale from “strongly agree” (1) to “strongly disagree” (5). For example, a tendency to endorse social responsibility is reflected in the item, *“If a good friend of mine wanted to injure an enemy of theirs, it would be my duty to try to stop them.”* Other items assess empathy (e.g., *“I often have tender, concerned feelings for people less fortunate than me”*) and moral reasoning (e.g., *“My decisions are usually based on my personal principles about what is fair and unfair”*). The remaining 14 items, all components of the helpfulness dimension, require participants to rate their frequency of specific prosocial behaviors from “never” (1) to “very often” (5).

Penner et al. (1995) provided evidence for the reliability and validity of the PSB. Coefficient alpha estimates for the two factors (other-oriented empathy and helpfulness) are reported to exceed .80, while test-retest reliability estimates are reported at .77 and .85, respectively. Penner et al. also report the results of several studies that offer evidence of validity, including evidence that the two factors correlate in theoretically consistent ways with relevant cognitive, affective, and behavioral measures. The internal consistency reliability (coefficient alpha) coefficients computed for the other-oriented empathy and helpfulness measures for the current sample are .85 and .84, respectively.

Prosocial Behavior

Prosocial behavior was assessed using the Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002). The 23-item PTM offers a global measure of self-reported prosocial behavior that encompasses six diverse types of prosocial

behavior: public (4 items); anonymous (5 items); dire (3 items); emotional (4 items); compliant (2 items) and altruistic (5 items). For each of the 23 items, participants rate the extent to which a statement reflecting a prosocial behavioral tendency accurately describes them on a five-point scale from “does not describe me at all” (1) to “describes me greatly” (5). Sample items include: *“I prefer to donate money anonymously”* (anonymous) and *“I get the most out of helping others when it is done in front of others”* (public).

Carlo and Randall (2002) report evidence of the reliability and validity of the PTM, including Cronbach’s alpha of .80 and two-week test-retest reliability coefficients above .60. In addition, the PTM has been shown to relate in theoretically consistent ways with other helping-related measures. The internal consistency reliability (coefficient alpha) coefficient computed for the PTM in the current sample is .74.

Procedures

Data Collection

The principal investigator arranged for and conducted data collection for this study using two principal strategies: 1) asking colleagues at both college campuses if they would permit the investigator to visit classrooms (with advance approval) to recruit volunteers and, when possible, to administer the self-assessments relevant to the proposed model; and 2) making announcements at meetings and other campus events and posting approved solicitations online via email.

To the extent possible, the self-assessments for this study (the demographic form, ECR, CSS, PVQ, PSB, and PTM) were administered to groups (typically, classrooms) of volunteer participants. The usual classroom at the two campus recruiting sources used in this study included about 30 students.

The assessments administered in this study were organized into packets and included the following materials: a title page with instructions, a brief demographic questionnaire, and the five assessments (i.e., the ECR, CSS, PVQ, PSB, and PTM). The title page and demographic questionnaire were always the first items in each packet (in that order). The order of the five assessments was counterbalanced to control for potential order effects. Packets were carefully prepared and organized given the need for distinct packets for males and females to accommodate the two versions of the PVQ.

In addition to the brief instructions included on the title page of each assessment packet, the investigator shared standardized instructions with participants that emphasized the following five key points: 1) the completely voluntary nature of participation in this research; 2) informed consent; 3) the confidential nature of individual self-assessment findings; 4) the general purpose of the research; and 5) the value of open, honest and complete self-assessment. Given that participant names were not collected at any point in the administration, the institutional review boards (IRBs) at the institutions involved exempted the study from review and did not require the use of a signed informed consent form. Anyone who wished not to participate in the research was excused from administration sessions. The standardized administration instructions, title page, and demographic

form included with assessment packets are reproduced in Appendices A, B, and C, respectively.

To emphasize the voluntary nature of the study, students were reminded that if they were participating in the study as a means of earning extra credit, they could, if they wished, refuse to participate in the study and instead complete an alternative assignment or project (as determined by their instructor) for extra credit. Alternative extra credit assignments were required to be of comparable difficulty as completing questionnaires (e.g., attending a one-hour community event, watching and reflecting on an one-hour film, reading and reflecting on a relevant article that can all be completed in about an hour).

As an attempt to minimize missing data, the investigator reminded participants of the importance of attending carefully to the self-assessments. To further encourage participant care when completing assessments, there was a brief reminder at the end of each assessment for participants to carefully review their work to ensure that all questions were answered. In addition, the investigator quickly reviewed each packet as they were submitted to verify that all assessments were fully completed.

It was important that participants provided open, accurate, non-biased answers to assessments that measure topics for which there may be some motivation to manage the impression presented. Hence, participants were urged to consider the scientific nature of the study and, knowing the confidential nature of the study, to reflect deeply and rate each question honestly. To avoid setting the stage for participants to consider their own hunches about the experimenter's

expectations or to ponder the specific (and perhaps personal) topics addressed by self-assessments, the instructions purposefully described the goals of the research in broad terms. Specifically, participants were advised that the purpose of the study was to explore and attempt to explain how the way one thinks, feels, and behaves might impact the way they relate to others in social situations.

CHAPTER 4: DATA ANALYSIS

Statistical Model

The statistical model initially tested for fit (and then refined as appropriate) in the current study is illustrated below in Figure 3.1. The model included nine observed variables, including two exogenous variables (i.e., attachment avoidance and attachment anxiety) and seven endogenous variables (i.e., caregiving avoidance, caregiving anxiety, self-enhancement values, self-transcendence values, other-oriented empathy, helpfulness, and prosocial behavior). The model is comprised of 45 unique elements (i.e., $(9(9+1))/2 = 45$) and 26 parameters. Hence, the degrees of freedom (df) for the initial statistical model was 19 (i.e., $45-26=19$).

The statistical model met the basic requirements for identification. In addition, the observed variables in the model evaluated in this study were all measured using at least five-point Likert or comparable scales and so they were initially treated as interval level variables. Hence, a maximum likelihood estimation technique consistent with performing SEM with interval level variables was planned. However, before the statistical model was formally evaluated, the data collected were evaluated to confirm their suitability for maximum likelihood estimation techniques.

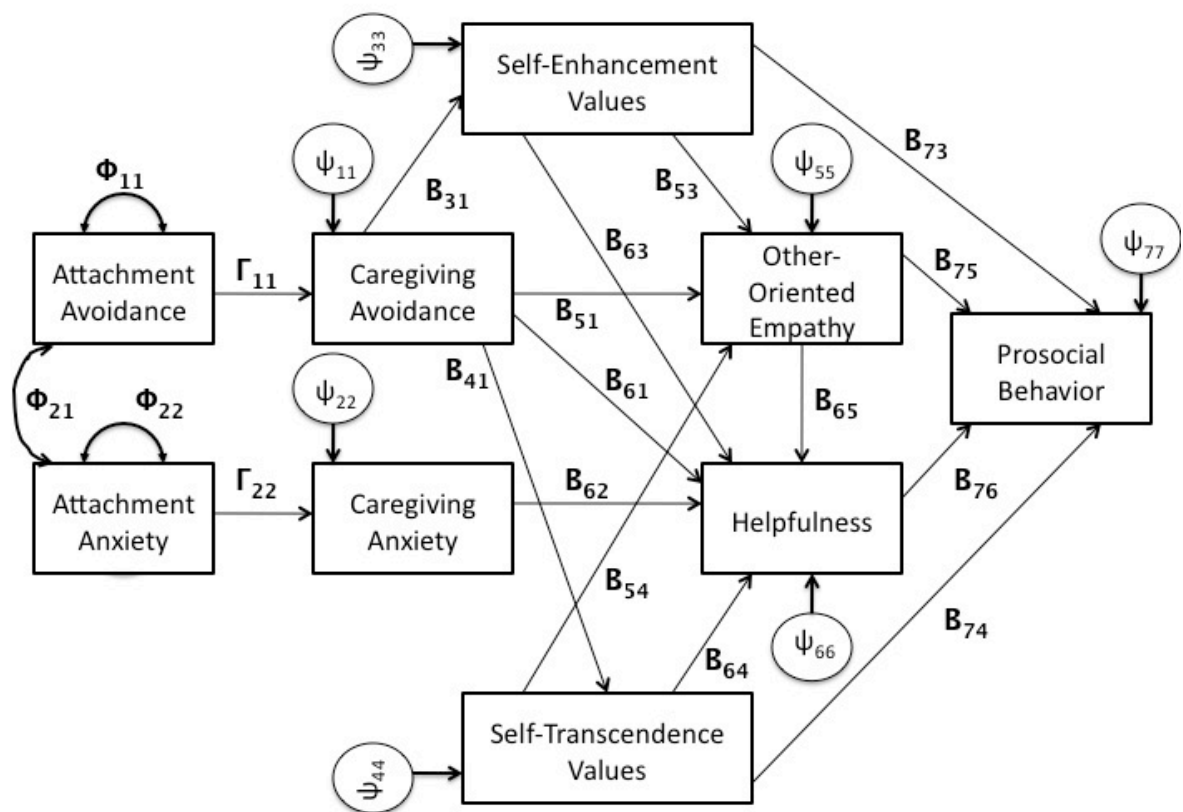


Figure 4.1. Statistical model for the Original Model.

Data Preparation and Review

Initial data analysis efforts focused on screening the data collected in this study for potential problems that might challenge the assumptions for maximum likelihood estimation techniques. Specifically, the data were reviewed to 1) review the estimated statistical power afforded by the final sample, 2) assess for the presence of extreme multivariate collinearity among the model variables, 3) check for the presence of univariate and multivariate outliers, 4) test the data for univariate and multivariate normality; 5) evaluate the impact of missing data, and 6) examine the reliability of observed measures.

Power. The final sample of 616 adult volunteer participants exceeded the *a priori* aim of recruiting at least 515 participants to achieve 80% or greater power to detect a not-close fit of the proposed structural model. The goal of 515 participants also included a cushion of 25 extra participants to account for potential issues with missing data and outliers.

Multivariate Collinearity. Two methods recommended by Kline (2011) were used to test for extreme multicollinearity among the model measures. First, a series of multiple regressions were computed to assess the squared multiple correlation (R^2) between each model. The R^2 values ranged from .192 (attachment avoidance) to .501 (empathy). None of the values were greater than .90, a criterion that would suggest extreme multivariate collinearity. Next, tolerance ($1-R^2$) and variance inflation factor (VIF, $1 - \text{tolerance}$) indices were examined. None of the tolerance values were less than .10 and none of the VIF values exceeded 10, criteria that may indicate extreme multivariate multivariate collinearity. Hence, there is no evidence that there is extreme collinearity among the nine variables included in the statistical model tested in this study.

Univariate and Multivariate Outliers. The data were evaluated for the presence of univariate and multivariate outliers (i.e., extreme scores) that might impact the data analysis. To assess for univariate outliers, the Z-score distributions for each of the nine observed model measures were carefully examined. The Z-scores (minimum, maximum) varied widely across the variables: attachment avoidance (-2.17, 3.52); attachment anxiety (-1.94, 2.79); caregiving avoidance (-1.90, 3.48); caregiving anxiety (-1.85, 3.25); self-enhancement (-3.08, 3.50); self-

transcendence (-3.69, 3.19); empathy (-3.63, 2.90); helpfulness (-2.91, 3.44); and prosocial behavior (-3.02, 2.72). The number of cases for which there was a Z score values of less than -3 or greater than 3 by variables follows: attachment anxiety (2); attachment avoidance (0); caregiving avoidance (3); caregiving anxiety (2); self-enhancement values (2); self-transcendence (5); empathy (3); helpfulness (3); and prosocial behavior (1). Given the large diverse sample of participants in this study and the expectation of rare cases at the extremes of just above plus and just below minus three standard deviations from the mean, no cases were categorized as extreme univariate outliers and removed from the sample or mathematically transformed.

The potential for multivariate and bivariate outliers was evaluated using the Mahalanobis distance (D) statistic, a measure of the distance in standard deviation units between a set of scores for each case and the mean for all variables, correcting for intercorrelations. None of the D statistics exceeded the critical F value ($p < .05$). Hence, there is no evidence that there are multivariate outliers in the current data.

Univariate and Multivariate Normality. Bivariate scatterplots for all of the pairs of model variables were examined. In addition, the skewness and kurtosis indices for each of the variables included in the model were carefully reviewed. The scatterplots and indices (skewness, kurtosis) were all consistent with univariate normality: attachment avoidance (.25, -.20); attachment anxiety (.27, -.58); caregiving avoidance (.73, .15); caregiving anxiety (.36, -.33); self-enhancement (.07, .43); self-transcendence (-.22, .85); empathy (-.15, .49); helpfulness (.24, .41); and prosocial behavior (-.16, -.15). Curran, West, and Finch (1996) recommend that

obtained univariate values approaching at least 2.0 and 7.0 for skewness and kurtosis, respectively, raise concerns that the data appreciably deviate from multivariate normality. All of the skewness indices are less than 2 and all of the kurtosis indices are less than 7 for the variables in this study. In addition, as noted above, there was no compelling evidence of extreme univariate or multivariate outliers.

Missing Data. There were no missing data in the current study. The completeness of the survey data is attributed to standardized administration instructions as well as reminders posted at the end of each survey that emphasized care in completing assessments. In addition, in those cases when there might have been incomplete surveys (and missing data), the practice of having the administrator double-check the surveys as they were submitted afforded participants the opportunity to review their survey and answer the questions they left blank.

Scale Reliability. All but two of the estimates of the internal consistency (coefficient alpha) coefficients for the scales used in the current study were at least .80. The internal consistency coefficients for the caregiving avoidance and prosocial behavior scales were .78 and .74, respectively. The reliability values computed in the current study for each of the scales are also comparable to those cited in prior research. Given the internal consistency reliability estimates for scales used in the current study were high, there was no correction for attenuation for the model variables in the SEM analyses.

Descriptive Statistics

Table 4.1 shows the mean, standard deviation, minimum and maximum values, and coefficient of variation (CV) for each of the nine observed measures in the model tested in this study. The greatest relative variability in data was among the PVQ composite measures (self-transcendence and self-enhancement), while the least relative variability in values occurs in the prosocial personality and behavior measures (empathy, helpfulness, and prosocial behavior).

Table 4.1

Descriptive statistics for model measures.

Measure	M	SD	Minimum	Maximum	CV
Attachment Avoidance	3.21	1.01	1.00	6.78	.31
Attachment Anxiety	3.18	1.13	1.00	6.33	.36
Caregiving Avoidance	2.63	.856	1.00	5.60	.33
Caregiving Anxiety	2.92	1.04	1.00	6.30	.36
Self-Enhancement	-.41	.71	-2.61	2.09	1.73
Self-Transcendence	.20	.52	-1.70	1.85	2.6
Empathy	-11.81	2.06	-19.30	-5.82	.17
Helpfulness	6.37	1.06	3.30	10.00	.17
Prosocial Behavior	3.02	.42	1.74	4.17	.14

Note: M = mean; SD = standard deviation; CV = coefficient of variation (i.e., M / SD).

Table 4.2 shows the correlation matrix for the nine model measures. All but five of the 36 correlation coefficients are statistically significant ($p < .05$). The strongest correlations are between the measures of attachment and caregiving

anxiety ($r = .572$), between the measures of self-transcendence and self-enhancement values ($r = -.579$), and between self-transcendence values and empathy ($r = .537$).

Table 4.2

Correlations between the model measures.

	Aanx	Cavo	Canx	SEnh	STra	Empa	Help	PSBe
Aavo	.233*	.341*	.194*	.172*	-.166*	-.351*	-.190*	.160*
Aanx		.162*	.572*	.143*	.007	-.025	-.189*	.126*
Cavo			.224*	.267*	-.327*	-.491*	-.309*	-.266*
Canx				.060	-.035	-.017	-.192*	.135*
SEnh					-.579*	-.457*	-.075**	-.195*
STra						.537*	.128*	.298*
Empa							.303*	.348*
Help								.360*

Note: Aavo = attachment avoidance; Aanx = attachment anxiety; Cavo = caregiving avoidance; Canx = caregiving anxiety; SEnh = self-enhancement; STra = self-transcendence; Empa = empathy; Help = helpfulness; PSBe = prosocial behavior.

* $p < .01$ ** $p < .05$

Proposed Model Fitting

The data preparation and review efforts provided sufficient evidence that the data collected for this study met the statistical assumptions of normality and that multivariate collinearity, missing data and extreme scores did not pose a problem. Hence, the maximum likelihood method, using LISREL software, was used for model estimation.

The results of the SEM analysis of the proposed model, including path coefficients, standard error, and statistical significance, are shown in Figure 4.2. This analysis did not provide compelling evidence to support the fit of the proposed model. The chi-square, an index of exact fit, was significant ($\chi^2 = 353.380$, $df = 19$, $p = .000$). However, the comparative fit index (CFI), an index of incremental or relative fit, was .841 (less than the .95 or greater value considered to be evidence of good relative fit). The RMSEA, an index of absolute fit, was .156, well above the value considered to be evidence of good ($< .05$), fair (.05-.08), and mediocre absolute fit (.08-.10). The effect size (R^2) value of .254 indicates that the model accounts for 25.4% of the variance in prosocial behavior.

Evaluation of Alternative Models

To assess the possibility of improving model fit, modification indices were computed to evaluate whether adding or freeing parameters might improve model fit. The maximum modification index provided the basis for assessing potential model revisions. When model revisions appeared conceptually appropriate and resulted in significant improvement in fit (based on a chi-square (χ^2) difference test), the revised model was accepted and opportunities for further modification were examined. This process was repeated until the prospects for further improving model fit appeared minimal.

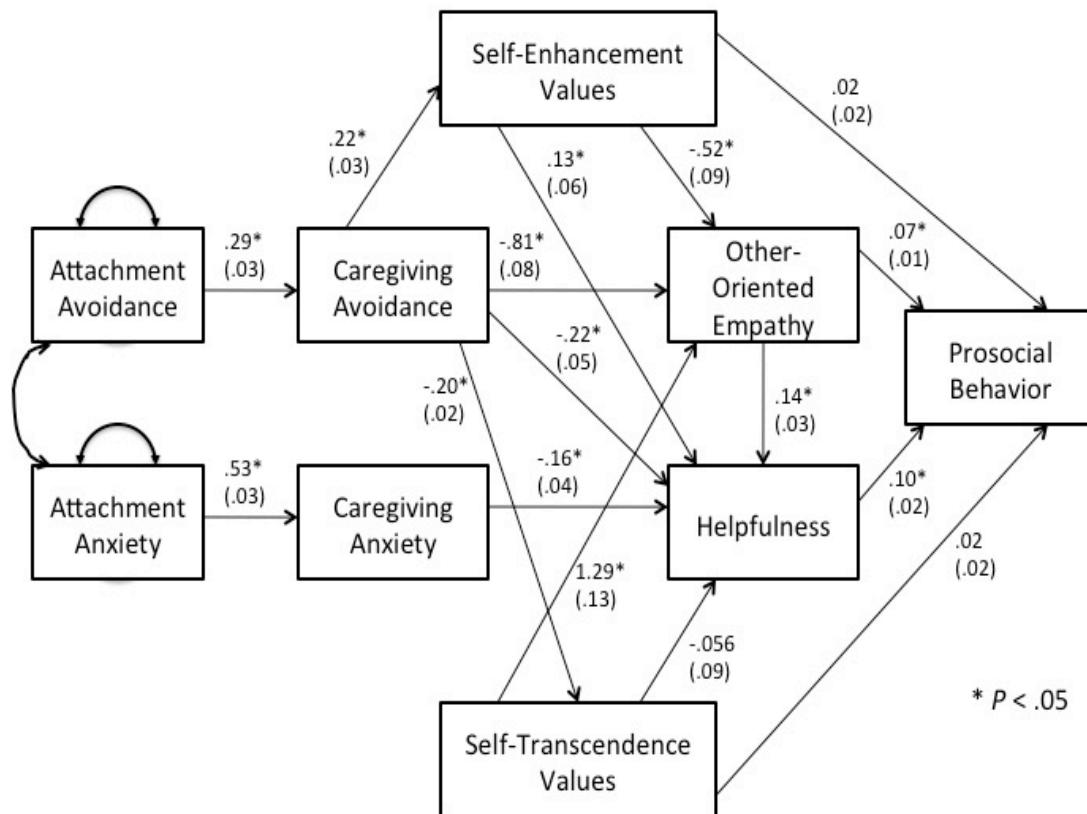


Figure 4.2. Maximum likelihood estimation results for the Original Model.

Table 4.3 summarizes the process of modifying and testing further revisions of the proposed model, including the modified models tests, the χ^2 and χ^2 difference test results, measures of the degree of model fit (i.e., RMSEA, CFI), and R^2 . A total of seven model modifications were evaluated. The final model, depicted in Figure 4.2, achieved a good fit ($\chi^2 = 37.27$, $df = 13$, $p = .00$; RMSEA = .05; CFI = .99).

Table 4.3

Summary of the evaluation of alternative models

Model	χ^2	χ^2 Diff	RMSEA	CFI	R ²
Original Model	353.38*, $df = 19$.16	.84	.25
New Model 1 (add β_{43})	141.48*, $df = 18$	211.90*	.10	.94	.26
New Model 2 (add β_{72})	109.14*, $df = 17$	32.39*	.09	.95	.30
New Model 3a (remove β_{51})	207.72*, $df = 18$	ns	.12	.91	.29
New Model 3b (add Γ_{51})	80.84*, $df = 16$	28.30*	.08	.97	.29
New Model 4 (add β_{12})	64.49*, $df = 15$	16.35*	.07	.97	.28
New Model 5 (add Γ_{42})	49.48*, $df = 14$	15.01*	.06	.98	.29
Final Model (add β_{52})	37.27*, $df = 13$	12.21*	.05	.99	.30

Note: The SEM results for the original proposed model are depicted in Figure 4.2. The SEM results for the final model are depicted in Figure 4.3. * $p < .05$, ns = not statistically significant, χ^2 Diff = chi-square difference test.

The first revision to the proposed model resulted in Model 1 and added a beta path between self-transcendence and self-enhancement values. The modification index of 179.25 for this beta coefficient was the highest for the proposed model. In addition, the empirically driven modification is entirely consistent with the Schwartz value model, which notes the opposing (orthogonal) nature of these two sets of values. The original model should have noted this path. This revision moved model fit values in the direction of significantly greater fit, but still did not result in an absolute or relative good fit.

The second model revision resulted in Model 2 and added a beta path between caregiving anxiety and prosocial behavior. The modification index of 31.02

for this beta coefficient was the highest for Model 1. The index suggests that caregiving hyperactivation has direct impacts on prosocial behavior that are independent of its impact on self-concept as a helper (i.e., helpfulness). This revision moved model fit values in the direction of significantly greater fit and resulted in a CFI indicative of good fit (.95); however, absolute fit was only mediocre (RMSEA = .09).

Two model revisions were evaluated as Models 3a and 3b as there were two comparably high modification indices identified from Model 2. The first revision to be assessed (Model 3a) removed the beta path between caregiving avoidance and empathy. It was driven by a modification index of 39.80 and suggests that caregiving deactivation does not impact self-reported empathy. This model revision, when tested, moved fit values in the direction of significantly poorer fit and was abandoned. Instead, the second revision assessed (Model 3b) was evaluated. This revision retained the beta path between caregiving avoidance and empathy and added a gamma path between attachment avoidance and empathy. This revision was driven by a modification index of 27.43 and implies that attachment avoidance has a direct impact on empathy that is independent of caregiving deactivation. This revision moved model fit values in the direction of significantly greater fit with fair absolute fit (RMSEA = .08) and good relative fit (CFI = .97).

A further model revision resulted in Model 4. This revision added a beta path between caregiving avoidance and caregiving anxiety and was driven by a modification index of 17.64. It suggests that the caregiving security measures covary, which is entirely conceptually consistent with the relationship proposed and

confirmed between attachment security measures. This revision moved model fit values in the direction of significantly greater fit with continued fair absolute fit (RMSEA = .07) and good relative fit (CFI = .97).

Model 5 resulted from the addition of a gamma path between attachment anxiety and self-transcendence. This revision was driven by a modification index of 12.83 and suggests that attachment anxiety has a direct impact on transcendence values. This revision moved model fit values in the direction of significantly greater fit with continued marginal absolute fit (RMSEA = .06) and good relative fit (CFI = .98).

A Final Model (depicted in Figure 4.3) was tested and included a beta path between caregiving anxiety and empathy. It was driven by a modification index of 11.89 and implies that caregiving hyperactivation directly impacts self-reported empathy. This revision resulted in both good absolute fit (RMSEA = .05) and good relative fit (CFI = .99).

The highest modification index for this Final Model suggested removing the very beta path between caregiving anxiety and empathy that was added to model 5. At this point, with good relative and absolute model fit, the process of revising and evaluating alternative models was discontinued.

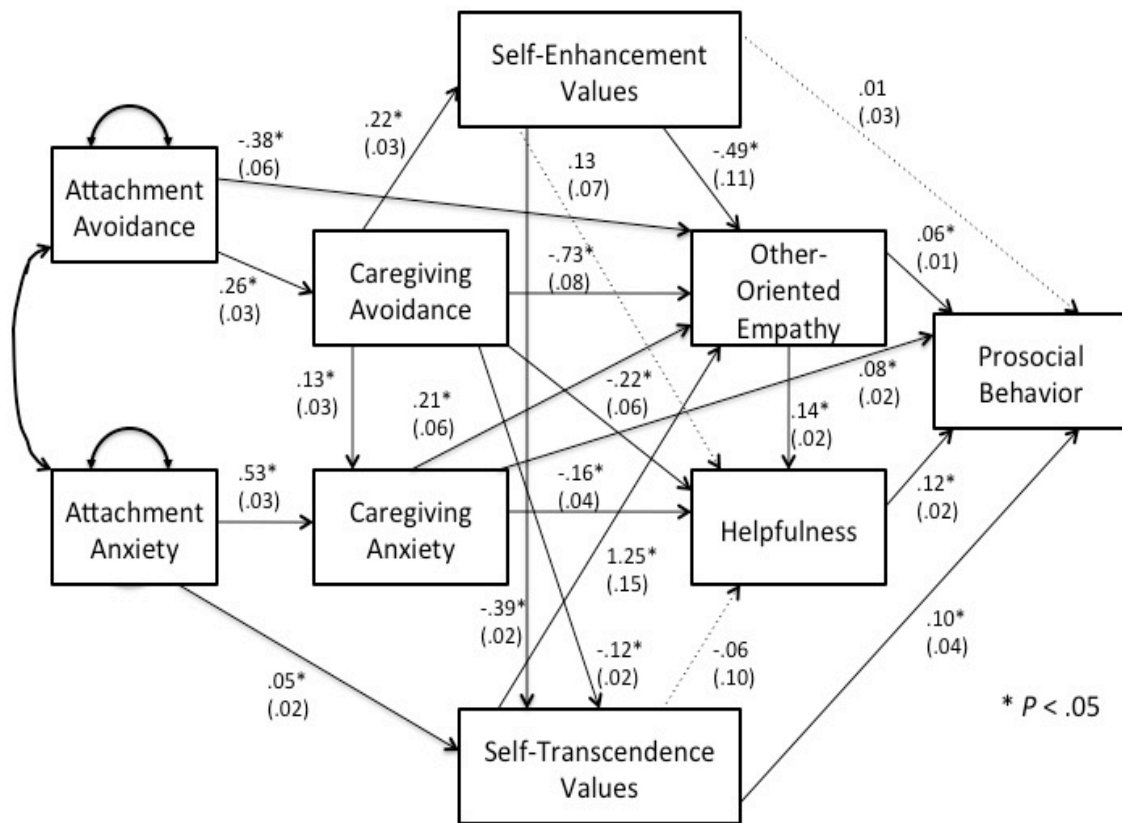


Figure 4.3. Maximum likelihood estimation results for the Final Model.

Table 4.4 shows the total and indirect effects for the final model. Overall, the indirect effect of attachment avoidance on empathy ($-.29$) accounts for just under half of the total effect of attachment avoidance on empathy ($-.67$). In addition, the indirect effect of attachment anxiety on transcendence value is inverse ($-.02$), while the direct effect is positive ($.04$). Both attachment avoidance and anxiety have significant indirect effects across the majority of the model variables. The indirect effect of attachment avoidance and anxiety on empathy and helpfulness are the greatest (i.e., $-.29$ and $-.14$ for avoidance; $.10$ and $.08$ for anxiety, respectively).

Table 4.4

Summary of total and indirect effects for the final model

Variable	Total Effects		Indirect Effects	
	Attachment Avoidance	Attachment Anxiety	Attachment Avoidance	Attachment Anxiety
Caregiving Avoidance	.26* (.03)	.07* (.02)	- -	.07* (.02)
Caregiving Anxiety	- -	.53* (.03)	- -	- -
Enhancement	.06* (.01)	.02* (.00)	0.06* (.01)	.02* (.00)
Transcendence	-.05* (.01)	.04* (.02)	-.05* (.01)	-.02* (.00)
Empathy	-.67 (.07)	.10* (.04)	-.29* (.04)	.10* (.04)
Helpfulness	-.14* (.02)	-.08* (.02)	-.14* (.02)	-.08* (.02)
Prosocial Behavior	-.06* (.01)	-.04* (.01)	-.06* (.01)	.04* (.01)

Note: * $p < .05$. Coefficients are unstandardized.

While the ultimate total effect of attachment avoidance and anxiety on prosocial behavior is relatively modest (i.e., -.06 and -.04, respectively), attachment avoidance has a strong, direct inverse effect on empathy (-.38). Furthermore, as a result of its direct relationship with caregiving avoidance, attachment avoidance has a strong, indirect inverse effect on empathy (-.29). Given that the largest path coefficients in the Final Model are between attachment avoidance, caregiving avoidance, self-transcendence values, self-enhancement values and empathy, the prosocial personality dimension of empathy appears central to understanding prosocial behavior.

Cross-Validation

The potential replicability of the results was assessed by examining the pattern of expected cross validation indices (ECVIs) achieved for the initial and revised models, including the Final Model. ECVIs for were .61 (original model), .33 (Model 1), .29 (Model 2), .41 (Model 3a), .25 (Model 3b), .23 (Model 4), .21 (Model 5), and .19 (Final Model). With the exception of Model 3a (a model that was not retained), the ECVIs progressively declined, an indicator of increasing likelihood that the model fit attained in this research would also be achieved in follow-up research with consistent statistical power.

CHAPTER 5: DISCUSSION

The current research aimed to contribute to the growing body of scientific research on prosocial behavior by positing, testing, and as appropriate revising a theoretically and empirically meaningful structural equation model (SEM) that helps to explain prosocial behavior. Each of the model revisions tested in this study was driven predominantly by the quest to empirically explore and refine the relationships between model variables based on modification indices. The original, revised and final models progressively refined the paths in which dispositional attachment security caregiving style, morally-relevant values, and prosocial personality characteristics influence the tendency to volunteer and help others.

Table 5.1 summarizes the results of the final model against the hypotheses proposed in the original model. Overall, only four of the 20 hypothesized original model relationships were rejected in the final model. It's important to note, however, that some of the paths in the final model, particularly the direct paths to prosocial behavior, were modest. Moreover, the failure to reject a hypothesis of no relationship between model variables (i.e., hypothesis 4) presents problems with respect to the likelihood of committing a Type II error.

Table 5.1

Original Model hypotheses and Final Model results

Original Model Hypotheses		Results
1	a) Attachment avoidance will be positively related with caregiving avoidance	Not rejected
	b) Attachment anxiety will be positively related with caregiving anxiety	Affirmed
2	Caregiving anxiety will not be related with caregiving avoidance	Rejected
3	Caregiving avoidance will be positively related with:	
	a) self-transcendence values	Not rejected
	b) self-enhancement values	Not rejected
4	Caregiving anxiety will not be related with:	
	a) self-transcendence values	Not rejected
	b) self-enhancement values	Not rejected
5	Caregiving avoidance will be inversely related with:	
	a) empathy	Not rejected
	b) helpfulness	Not rejected
	c) Caregiving anxiety will be inversely related with helpfulness	Not rejected
	d) Caregiving anxiety will not be related with empathy	Rejected
6	Self-enhancement values will be inversely related with:	
	a) empathy	Not rejected
	b) helpfulness	Rejected
	c) prosocial behavior	Not rejected
	Self-transcendence values will be positively related with:	
	d) empathy	Not rejected
	e) helpfulness	Rejected
	f) prosocial behavior	Not rejected
7	a) Empathy will be positively related with helpfulness	Not rejected
	b) Empathy will be positively related with prosocial behavior	Not rejected
	c) Helpfulness will be positively related with prosocial behavior	Not rejected

The Final Model depicted earlier in Figure 4.3 achieved a good fit (RMSEA = .05, CFI = .99, $\chi^2 = 37.21$, $df = 13$, $p = .00$) and accounts for 30% of the variance in prosocial behavior. The final model differs significantly from the proposed model. It includes six paths not originally proposed. These paths include: 1) a beta path between self-enhancement and self-transcendence values; 2) a beta path between caregiving anxiety and prosocial behavior; 3) a gamma path between attachment avoidance and empathy; 4) a beta path between caregiving anxiety and caregiving avoidance; 5) a gamma path between attachment anxiety and self-transcendence values; and 6) a beta path between caregiving anxiety and empathy. As the first SEM to evaluate the potentially very complex relationships between attachment styles, caregiving styles, values, prosocial personality and behavior, this final model offers fruitful avenues for conceptual clarification and raises important questions for further research.

Earlier, in chapter 2, the theoretical and empirical justification for the proposed paths between variables in the original model was carefully and systematically reviewed, beginning with attachment security and then continuing through each of the other variables in the model (i.e., caregiving security, morally-relevant values, prosocial personality, and prosocial behavior). Below is a discussion of the relationships between variables observed in the final model for the sample of 616 adult volunteers who participated in this study. This discussion moves variable by variable through the model and focuses particular attention on those instances when the observed Final Model relationships differed from those that were

proposed. Following this discussion is a review of the limitations of the research, including possible directions for follow-up research.

Relationship Between Attachment Styles and Other Measures

Figure 5.1 shows the relationships (with path coefficients and their statistical significance) between attachment avoidance and attachment anxiety and the other measures in the Final Model (i.e., caregiving avoidance, caregiving anxiety, self-transcendence values, and other-oriented empathy). As predicted by the first hypothesis of the current study, attachment security is significantly related to caregiving security. Specifically, attachment avoidance is positively related to caregiving avoidance ($r = .341, p < .05; \beta = .26, p < .05$) and attachment anxiety is positively related to caregiving anxiety ($r = .572, p < .05; \beta = .53, p < .05$). However, there are two significant relationships in the final model not hypothesized in the proposed model: 1) a modest, but positive and significant path between attachment anxiety and self-transcendence ($r = .007, ns; \beta = .05, p < .05$) and 2) an inverse path between attachment avoidance and empathy ($r = -.351, p < .05; \beta = -.38, p < .05$).

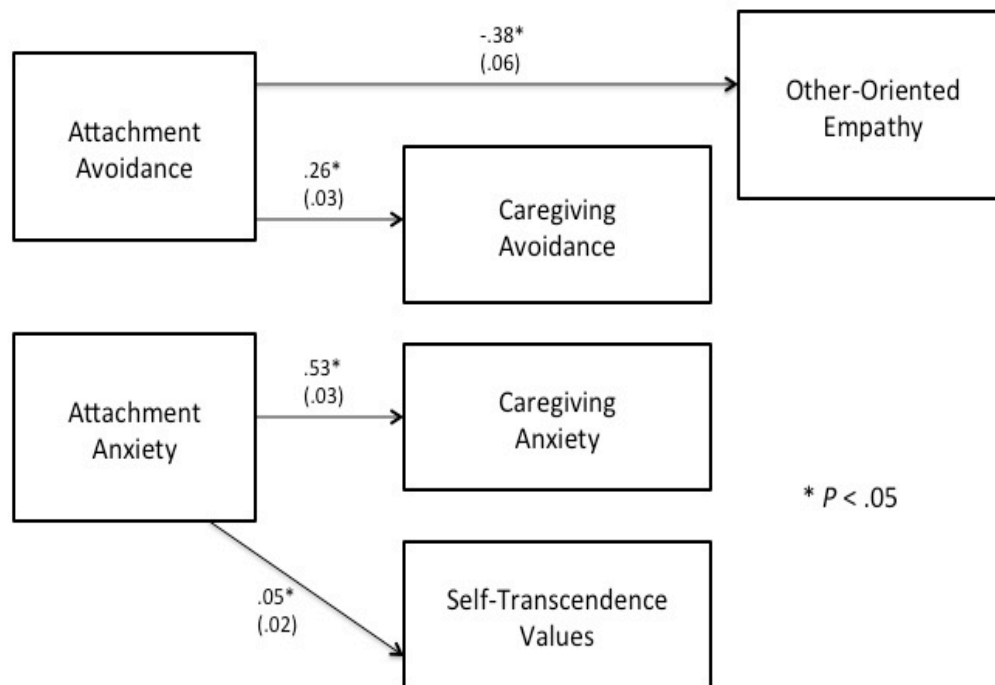


Figure 5.1. Relationships among attachment and other measures.

While a significant inverse relationship between attachment avoidance and empathy has been found in prior research (Britton and Fuendeling, 2005; Joireman, et al., 2001; Wei, Liao, Ku and Chaffer, 2011), a recent study (Shaver et al, 2010) had provided evidence of a significant inverse relationship between caregiving avoidance and empathy, as well as a positive relationship between attachment avoidance and caregiving avoidance. As this is the first study to examine the paths between attachment security, caregiving security, and empathy, it was hypothesized that the attachment avoidance and empathy relationship would be entirely

mediated by the relationship between attachment avoidance and caregiving avoidance. It was assumed that the impact of attachment avoidance on empathy was entirely the result of the impact of attachment deactivation on caregiving deactivation. Instead, however, attachment anxiety appears to have both a *direct* impact on empathy and an *indirect* impact on empathy (via its relationship with caregiving avoidance). While this nuanced relationship needs to be replicated in further research, it is entirely consistent with prior studies. For example, Reizer and Mikulincer (2007) demonstrated that individuals with an insecure avoidant attachment style are not only less prone to be compelled to appreciate the needs of others and be motivated to offer help (i.e., to exhibit caregiving avoidance or deactivation), but they are also less able to appropriately know and appreciate the inner experience of others well enough to recognize the needs of others and to be able to in turn offer consistent, responsive help. Individuals with high attachment avoidance may both not care to empathize (i.e., show evidence of an avoidance caregiving schema) and at the same time not know how or when to empathize in a meaningful way (i.e., show evidence of lack of a competency for expressing empathy). Attachment avoidance may result in both a mindset or schema and a knowledge and skill gap that interferes with the ability to be empathic. This finding would suggest that interventions to help those individuals with high attachment avoidance be more empathic would involve cognitive, motivational and behavioral (competency-building) activities.

The path between attachment anxiety and self-transcendent values is quite modest and could simply be an artifact of the current sample and/or a social

desirability bias that is more likely given the self-report nature of the measures in this study. However, this relationship, even if driven by a social desirability bias, can be argued to be entirely consistent with the unhealthy, covert narcissism that is part of the nature of attachment anxiety (Hendin & Cheek, 1997). Individuals with high levels of attachment anxiety are more likely to attend carefully to others for cues from which to judge their own felt security. Rather than choose to be overtly narcissistic and compulsively self-reliant (as those with attachment avoidance), the individual with high attachment anxiety is more apt to be willing to endorse (but perhaps not authentically practice) the moral values of universalism and benevolence because it results in approval cues from important others. The positive schema that anxious caregivers hold about others (but not themselves) is one reason these individuals often end up appearing needy and dependent on others for approval and support. The insecure-anxious individual may see themselves as someone who sincerely cares for the needs of others and is compassionate and kind because it is valued by others more than an overt endorsement of self-enhancement values. Nevertheless, the anxious individual remains unable to fully implement these self-transcendent values in their everyday life because of their chronic self-doubts and the resulting waves of emotional distress. This nuanced explanation for the attachment anxiety and self-transcendent values relationship should be the subject of further research.

Relationship Between Caregiving Styles and Other Measures

Figure 5.2 shows the relationships between caregiving styles, moral values, and other measures in the final model. The relationships with caregiving styles and moral values are entirely consistent with those predicted by hypotheses three and four. Specifically, caregiving avoidance is positively related to self-enhancement values ($r = .267, p < .05; \beta = .22, p < .05$) and inversely related to self-transcendence values ($r = -.327, p < .05; \beta = -.12, p < .05$). Moreover, there is no path (nor significant correlation) between caregiving anxiety and either self-enhancement or self-transcendence values.

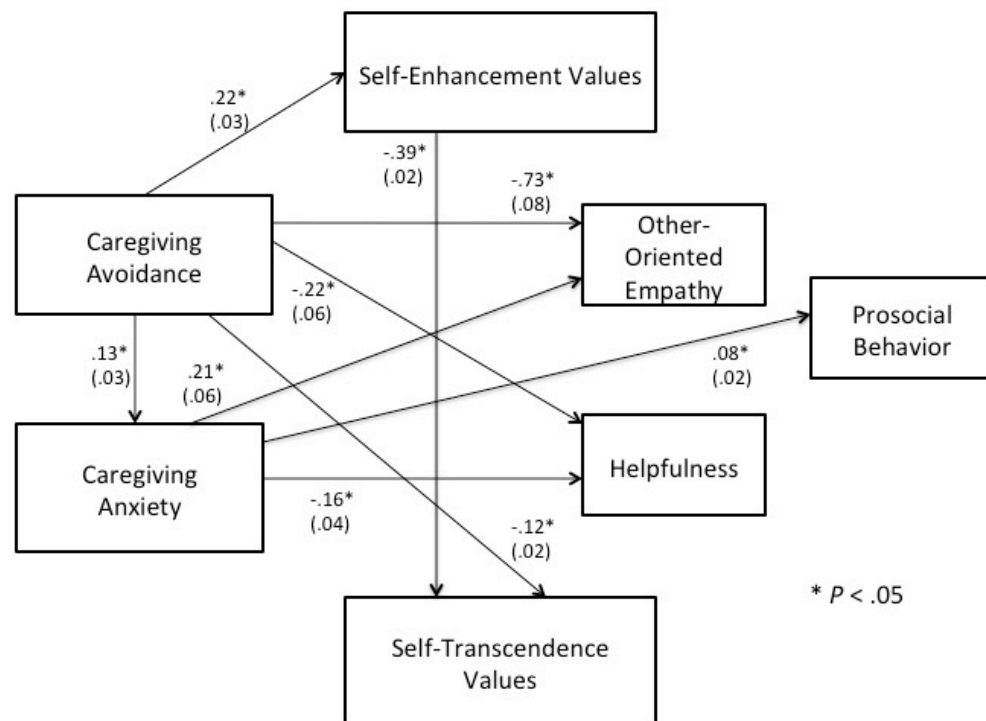


Figure 5.2. Relationships among caregiving and other measures.

The final model offers support for all but one of the four claims of hypothesis five made about the relationships between caregiving styles and prosocial personality (empathy and helpfulness). As proposed, there were significant, inverse relationships between caregiving avoidance and empathy ($r = -.49, p < .05; \beta = -.73, p < .05$) and between caregiving avoidance and helpfulness ($r = -.31, p < .05; \beta = -.21, p < .05$). In addition, a significant, inverse path was found between caregiving anxiety and helpfulness ($r = -.19, p < .05; \beta = -.16, p < .05$).

Inconsistent with hypothesis three, however, there is a significant, positive relationship between caregiving anxiety and empathy ($r = -.02, ns; \beta = .21, p < .05$). Comparable to the rationale offered for the detected relationship between caregiving anxiety and self-transcendence values, it is possible that this positive relationship is an artifact of social desirability biases that are more likely given the self-report nature of the current study. The empathy measure reflects more of a willingness to see oneself as someone who can effectively take another person's perspective and show concern for the needs of others. Individuals with high caregiving anxiety may be more apt to see themselves as a person with a strongly empathic personality because these characteristics are typically held in esteem by important others. However, in actual practice, anxious individuals may be unable to actually exhibit this hoped for empathic personality, particularly under distress.

Interestingly, like the current study, Trusty et al. (2005) found a positive relationship between attachment anxiety and empathy, which they argue results from understanding others' pain better because of personal distress experiences. Two recent studies reported by Wei et al. (2011) also examined the relationship

between attachment anxiety and empathy. In the first study with a college student sample, Wei et al. found a significant, positive relationship between attachment anxiety and empathy. But in a follow-up study with a community sample, the relationship between attachment anxiety and empathy was not statistically significant. Only one other study (besides the current study) has examined the relationship between caregiving anxiety and empathy using the PPB (Shaver et al, 2010) and it found no evidence of a significant relationship. Clearly, more research is needed to better understand the moderators that might impact the relationship between attachment and caregiving anxiety and empathy.

Inconsistent with hypothesis five, there is a modest, but significant, direct relationship between caregiving anxiety and prosocial behavior. It was hypothesized that any relationship between caregiving anxiety and prosocial behavior would be mediated by empathy and helpfulness. However, consistent with the rationale for the positive path between caregiving anxiety and empathy, it appears likely that the anxious caregiver self-reports a greater tendency to engage in prosocial behavior, but (given the inverse relationship between caregiving anxiety and helpfulness), the anxious caregiver may not necessarily actually engage in entirely effective, responsive helping behavior.

Inconsistent with hypothesis two, there is a significant, positive relationship between caregiving avoidance and caregiving anxiety ($r = .22, p < .05; \beta = .13, p < .05$). Only one prior assessment (Shaver et al., 2010) has examined the relationship between these scales; it found no significant relationship and suggested the caregiving dimensions were theoretically orthogonal. In the current study, there

is a significant correlation ($r = .23, p < .05$) between attachment avoidance and attachment security, which is consistent with that found in another recent study (Wei et al., 2011). It is important that future studies further explore the relationship between the CSS anxiety and avoidance scales.

Relationship Between Values and Other Model Measures

Figure 5.3 shows the relationships between values, prosocial personality, and behavior. Evidence for only three of the six relationships proposed via hypothesis six was found in the Final Model.

As predicted, there was a significant, inverse relationship between self-enhancement values and empathy ($r = -.46, p < .05$; $\beta = -.49, p < .05$). However, while an inverse path between self-enhancement values and helpfulness was hypothesized, there was no significant path found between these variables ($r = -.07, p < .05$; $\beta = .13, ns$). Interestingly, while the individual with high caregiving avoidance is less likely to identify as helpful, the greater endorsement of self-enhancement values by the avoidant caregiver could be hypothesized to act in part as a buffer to temper any impact on the individual's readiness to self-identify as an unhelpful person. It would be helpful to conduct future research to examine the self-versus other-report assessments of helpfulness (and empathy) of individuals with varying levels of caregiving (and attachment) security.

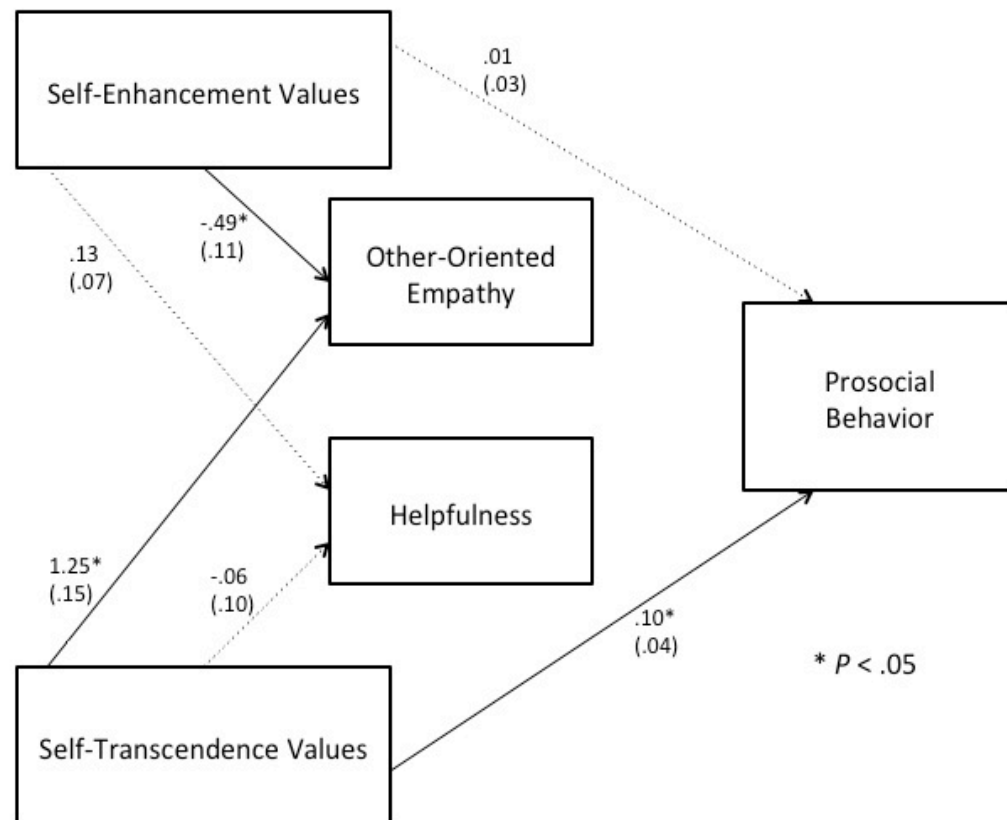


Figure 5.3. Relationships among moral values and other measures.

As hypothesized, self-transcendence values were significantly, positive related to empathy ($r = .54, p < .05; \beta = 1.25, p < .05$). In fact, this path had the largest beta coefficient in the final model. Individuals who endorse self-transcendent values are significantly more likely to self-report greater engagement in perspective taking, empathic concern, and other-oriented moral reasoning. However, inconsistent with the Original Model, there was not a significant path between self-transcendence values and helpfulness ($r = .13, p < .05; \beta = -.06, ns$). Nevertheless, there was a significant, positive relationship between self-

transcendence values and prosocial behavior ($r = .35, p < .05; \beta = .10, p < .05$).

Despite predictions otherwise, there was not a significant path between self-enhancement values and prosocial behavior ($r = -.20, p < .05; \beta = .01, ns$). The relationship between moral values and prosocial behavior appears to be predominantly mediated by prosocial personality measures, particularly empathy. However, the self-report nature of the prosocial behavior measure may result in a social desirability bias (and, as a result, the limited variability found in the prosocial behavior measure used in this research). This is the first study to examine the relationship between the moral values and the prosocial personality using the PSB. Prior research has shown that self-transcendent values, when primed, increased self-reported empathy and perspective taking (Batson et al, 2007; Silfver et al., 2008), which is consistent with the relationship found in this study between empathy and self-transcendent values. However, no prior research has addressed the relationship between self-transcendent values and the PSB construct of helpfulness.

Relationships Between Prosocial Personality and Prosocial Behavior

Figure 5.4 shows the relationships between the prosocial personality measures (empathy and helpfulness) and prosocial behavior. The relationships detected in the final model are entirely consistent with those proposed in hypothesis seven. Empathy ($r = .35, p < .05; \beta = .06, p < .05$) and helpfulness ($r = .36, p < .05; \beta = -.12, p < .05$) are both positively related with prosocial behavior. In

addition, empathy is positively related to helpfulness ($r = .30, p < .05; \beta = .06, p < .05$).

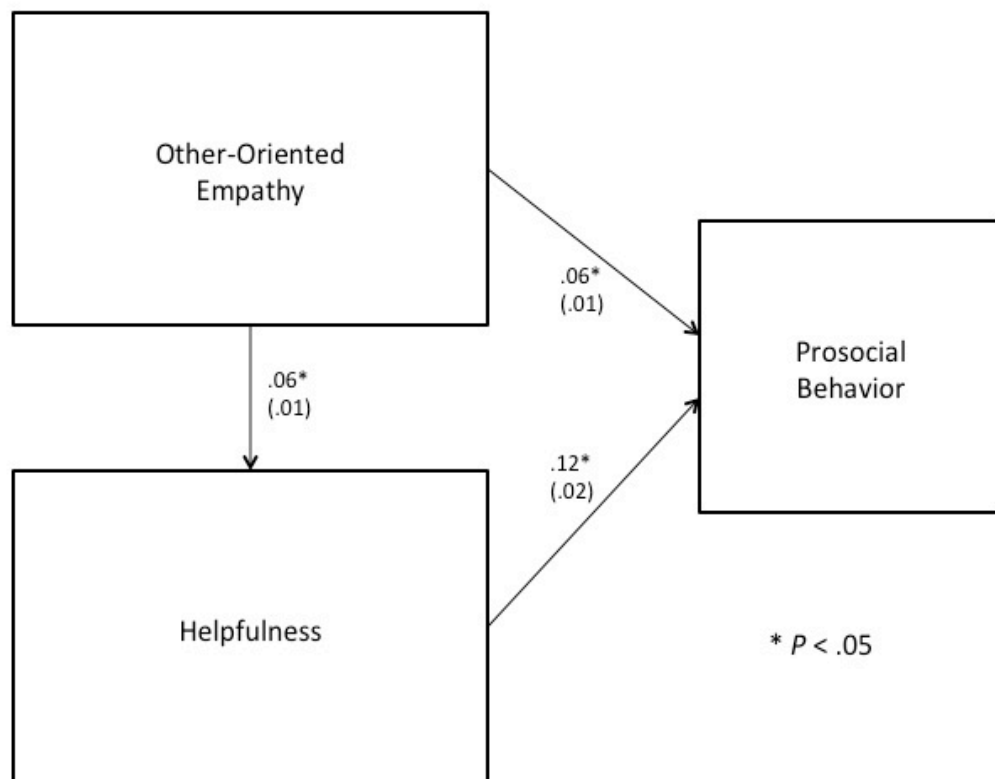


Figure 5.4. Relationships between prosocial personality and behavior measures.

Limitations of the Study and Directions for Future Research

The current study has at least four potentially very serious limitations, including (1) a complete reliance on self-report measures for all model constructs; (2) the predominant use of a sample of adult student volunteers that may not be representative of the population of all adults; (3) the certain incomplete nature of

the conceptual model (i.e., there are likely many other important antecedent and mediator variables that impact prosocial behavior besides those included in the current model); and (4) the lack of a cross-validation sample to best assess the degree to which the current study results will generalize to other samples.

The use of self-report measures introduces the potential for participants to give responses to questionnaire items consistent with leaving a favorable impression. This bias likely limited the variability of the measures in this model and potentially leads to false conclusions about the nature of the actual relationships between actual versus reported attitudes and behavior. To reduce this potential, the administration instructions intentionally emphasized the importance of open, honest self-report to increase the scientific value of the current study. In addition, administration procedures aimed to make the confidential nature of participant responses especially salient. However, it is important that future research compare the results of this study (which used self-report questionnaire measures) with the results of studies that use other possible measures, including interview, other-report and observational (behavioral) measures. Behavioral measures would be particularly helpful in validating self-reported attachment and caregiving security, moral values, prosocial personality and prosocial behavior.

In addition to problems with the nature of research that relies exclusively on self-report measures, it is also difficult to conduct integrative research that examines multiple dispositional measures because of the burden that multiple measures can place on participants. The current research required about an hour of participant time and, despite cautions otherwise, it is likely that there was a

tendency to rush through the assessment. Moreover, the CSS, PVQ, and PTM were subject to rapid, less reflective responding by participants as these measures contained no reversed items. Future research could focus on developing better measures of these and other potentially important variables that impact prosocial behavior.

While the current sample was purposefully drawn from technical colleges to increase the likelihood of recruiting a diverse sample of participants, it is still likely that adult volunteers drawn from college students, faculty, staff and their family and friends differ in systematic ways from the general population of all adults. Nevertheless, the sample of technical college students in this study likely differs systematically from the typical undergraduate college students who volunteer for psychological research. Regardless, it is important that the generalizability of study findings be appropriately assessed across other large, more diverse samples.

There are likely numerous dispositional and situational variables that impact the degree to which individuals engage in prosocial behavior. The current study only examines a small subset of dispositional variables and does not purposely manipulate situational variables. The situational context is very important in research that includes measures of attachment and caregiving security as these variables quite readily respond in important ways to even subtle cues and triggers (e.g., Mikulincer et al., 2001). It is important that future research add to our integrative understanding of the antecedents of prosocial behavior by including as many dispositional and situational variables as possible. Experimental research is particularly important to clarifying causal paths between constructs, as well as

important moderator and mediator variables. Moreover, the current study, an integrative SEM, offers the first of what are hopefully many future similar studies that address the combined influence of multiple variables on prosocial behavior.

In addition to studies that further address the integrative perspectives of behavior, the current study also highlights the needs for specific research to examine specific model relationships. For example, there is a need for further research to explore the impact of caregiving anxiety on empathy. Further research that addresses the relationship between moral and other values on attachment and caregiving security would also be helpful. Research can also examine the relationships of attachment security on behavioral systems other than caregiving, including exploration.

Finally, the current study includes a sample estimated to be large enough to achieve statistical power of 80%. However, given the demands of recruiting a sufficiently large cross-validation sample, the current study only uses a statistical formula, the expected cross validation index (ECVI), to estimate the cross-validation of results. It is important that future researchers assess the generalizability of study results using a new sample.

Summary Conclusions

The current study began with the quest to better understand how four major psychological constructs – dispositional attachment security, dispositional caregiving style, morally relevant values, and prosocial personality – serve as antecedents of prosocial behavior. Humans have likely always been trying to

understand the nature of helping behavior as reflected in the various version of the “Golden Rule” found in numerous religions and in many secular value systems throughout history. Partly in response to the rise in research on positive psychology, psychologists have recently focused substantially more scientific effort on better understanding how psychological constructs such as attachment, values, and personality influence helping and other similar behaviors, including morality, aggression and violence (see Alicke & Sedikides, 2010, Mikulincer & Shaver, 2010, and Shaver & Mikulincer, 2010, 2011). The present study was the first, however, to organize and integrate variables related to attachment, caregiving, values and the prosocial personality into a conceptual model and then assess the combined influence and interactions of these variables on prosocial behavior. The current research is a direct response to calls for more integrative research that would help advance our understanding of the antecedents of prosocial behavior (e.g., Bierhoff, 2002; Mikulincer & Shaver, 2007; Schwartz, 2008).

While this is the first study to examine the combined, integrative influence of four dispositional variables on prosocial behavior, the results appear consistent with prior correlational research that shows significant relationships between attachment, caregiving, values, personality variables and prosocial behavior (e.g., Mikulincer & Shaver, 2010). As predicted by prior research summarized in Chapter 2, the Final Model includes support for 12 of 15 (80%) of the hypothesized (Original Model) relationship paths.

The three (20%) of the hypothesized (original model) relationship paths not supported in the Final Model included: 1) an inverse relationship path between self-

enhancement values and helpfulness; 2) an inverse relationship path between self-enhancement values and prosocial behavior; 3) a positive relationship between self-transcendence values and helpfulness. These results suggest that the relationship between morally relevant values and helpfulness are more complex than originally proposed and a potentially important area for further conceptual research. These results are quite provocative given the particularly strong relationship path between morally relevant values and empathy. It could be, for example, that the results are simply a measurement artifact of the perspective taking, socially-minded and open cognitive style implicit in both the self-transcendent values and empathy and the more self-reliant, closed, and self-focused cognitive style in both the self-enhancement values and a lack of empathy. The self-transcendent values of benevolence (caring for others) and universalism (tolerance, societal concern) may simply reflect the core beliefs (and ways of thinking) that form the essence of the empathic mind. In contrast, the self-enhancement values of self-direction (autonomy of thought and action), hedonism (self-pleasure and self-gratification), and achievement (personal success, competence) may form the essence of the non-empathic mind. Further research might explore what other variables besides attachment and caregiving styles, such as level of cognitive development, openness to new experience, emotional styles, and distress tolerance, might influence the development and intensity with which one holds these morally relevant values.

The Final Model includes five paths not proposed in the Original Model, including: 1) a significant inverse relationship between attachment avoidance and empathy; 2) a significant, but modest, positive relationship between attachment

anxiety and self-transcendence values; 3) a significant positive relationship path between caregiving anxiety and empathy; 4) a significant inverse relationship between caregiving anxiety and prosocial behavior; and 5) a very strong, significant inverse relationship between self-enhancement values and self-transcendence values. The very strong inverse relationship path between the morally relevant values should have been proposed because it is entirely consistent with the orthogonal nature of these two sets of values outlined in the Schwartz (1992) value model.

The other four unexpected paths in the Final Model, however, provide additional avenues for future research, particularly research to better understand the nuances associated with the anxious and avoidant caregiving styles. To be appropriately explored, these nuances may require conceptually clarifying and improving the self-report measure of caregiving style, which, as a result of an absence of reverse-keyed items, was not as resistant to inflationary response sets as the self-report attachment style measure. It may also be that participants are more forthcoming about their attachment insecurities, but struggle to expose their true beliefs about caregiving. Future research might also include a social desirability measure to better account for this influence on the measures.

The Final Model is quite complex, which likely reflects the complex and integrative nature of human behavior. However, there are important variables that could be included in further research to help better understand the complex relationships included within the model. For example, the Schwartz (1992) value model includes two other categories of values – openness to change and

conservation. Future research should explore the way these values relate with the other measures in the Final Model.

Moreover, the role of the self-transcendence values and empathy measures appears central to the current model. The relationships between empathy and other variables (e.g., self-enhancement values, self-transcendence values, caregiving avoidance, and attachment avoidance) are among the strongest in the model. The relationship between self-transcendence values and empathy, as noted earlier, is especially strong and may reflect core cognitive styles and beliefs that are inherent to empathy. It would be helpful to further operationalize empathy and explore the way it is influenced by attachment, values, and other relevant measures. In addition, it would be valuable to explore interventions based on the relationship between self-transcendence and empathy as a means of increasing prosocial behavior. Certainly, religion focuses on increasing the endorsement of self-transcendence values of benevolence and universalism at least in part to increase empathy. This very focus on self-transcendence may be one reason that research shows that those who self-report being religious contribute more (via financial and other donations) to those in need, even after controlling for donations resulting from giving directly to the church (Zuckerman, 2010). It would be important to better understand how to prompt an endorsement of self-transcendence values and to evaluate the impact of these interventions on other relevant variables. Self-transcendence may be very useful for instilling empathy in others, a principle inherent in the Golden Rule.

While conceptual research is important as psychological science aims to understand and explain prosocial behavior, it is also time to conduct more applied

research like that proposed above for prompting greater endorsement of self-transcendence values. As Shaver and Mikulincer (2010) asserted, little research has focused on the way that attachment processes impact relationships at work, in school, and in society in general and Mayseless (2010) called for research that examines the relationship between attachment and destructive leaders. Research could focus on the impact of experimental priming of attachment insecurity, morally relevant values, empathy and helpfulness, and other variables on behavior in important applied settings where prosocial behavior is possible. However, there is also much to learn from further correlational and structural modeling research with criterion measures more directly related to specific prosocial behaviors as opposed to relying on self-report.

The process of proposing, testing, and refining a structural model of the relationships between attachment security, caregiving security, morally-relevant values, prosocial personality and prosocial behavior offers several conceptual insights and suggests important research questions that may lead to a better understanding of the nature and antecedents of prosocial behavior. It is noteworthy that the four self-reported psychological constructs accounted for 30% of the variability in self-reported tendencies to engage in prosocial behavior. This finding is particularly compelling given the restricted variance in the current sample for self-reported prosocial behavior, a phenomenon likely inherent in self-reports of prosocial behavior.

By showing that tendencies to help others can be meaningfully predicted by responses to relatively brief surveys, this research draws further attention to the

importance of interventions for increasing prosocial behavior, including interventions that: 1) support and coach parents to foster secure attachment bonds with their children; 2) help insecure adults earn greater security; 3) encourage and foster more self-transcendent (as opposed to self-enhancement) values; and 4) train and reinforce empathy and helpfulness. Using self-assessments, including those used in the current study, may serve as a valuable prompt to help adults purposely reflect on their own characteristic attachment and caregiving styles, values, prosocial personality and behavior. Motivational interviewing may also help to support adults as they begin to contemplate and, as relevant, prepare and act on deliberate plans for personal change and growth. Unfortunately, the most appropriate and effective interventions would be expected to be directed at individuals as early in the lifespan as possible. This would require a greater focus on prevention, including the early identification of risk factors that might prompt schemas that oppose prosocial behavior (e.g., early indicators of insecure attachment styles, self-enhancement values, lack of empathy and helpfulness, and aggressive or antisocial behavior) and the ready capacity to act to introduce protective interventions that promote prosocial attitudes, emotions, values, and behaviors.

Further research that incorporates other psychological constructs, such as measures of cognitive openness, Big 5 personality dimensions, emotional styles (Davidson & Begley, 2012), ways of coping, in even more complex models may further clarify explanations and improve predictions of prosocial behavior. In addition, models that include alternate behavioral and other report measures of

important constructs such as attachment, values and prosocial personality dimensions, may prove even more predictive of prosocial behavior. Moreover, the current study offers hope that further integrative research will examine the influence of multiple psychological constructs, including attachment, values and personality measures, on other important morally relevant behaviors such as crime, violence, aggression, cooperation, and ethical decision making.

As with attachment research, much of the research on prosocial behavior is limited in scope and self-report. Similar to the current study, much of this research examines prosocial behavior as a hypothetical, general self-report variable not directly related to actual human behavior in the numerous important social settings we encounter every day where helping behavior (and non-helping behavior) is possible and can lead to important and lasting consequences. This research is clearly far more challenging to operationalize and control than the current research, but it is necessary to advance our understanding and to make research findings even more compelling.

Accounting for 30% of the variance in prosocial behavior and showing how four important psychological constructs influence prosocial behavior is a good start. Nonetheless, the direct relationships between empathy, values and prosocial behavior were, when they were supported, quite modest. In fact, all of the significant relationships (i.e., path coefficients) between prosocial behavior and other measures in the model were less than .12. While the quest to better understand helping behavior began many centuries ago with examinations of the Golden Rule, and continues now with the rapid accumulation of provocative

scientific knowledge on this and other relevant moral behaviors, there clearly is still much to learn.

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APPENDIX A

Standardized Data Collection Protocol (Instructions)

Thank you for your interest in participating in my research. I'm Bob DuBois and I'm the principal investigator for this study. I'd like to take a few minutes to review the goals of my study and to discuss what is required if you choose to participate in it. I'd like to be sure you fully understand everything. Once I'm sure you understand, I'll give you an opportunity, if you wish, to consent to participate in this research.

First, the goal of this research is to investigate how the way individuals think, feel, and behave might help explain how they relate with others in social situations. While I have specific hunches about what I think I'll find, it is important in science that I not share them with you. Instead, I am looking for each of you, if you choose to participate in this study, to answer some questions relevant to the topic of my research so that I can go back and merge and analyze the answers from hundreds of participants like you to try to discover what is true about the research topic. It's not only important that I don't share my hunches with you, but it's also important that you don't try to ponder the current study too much. Instead, today, if you choose to participate in this study, I just want you to openly and accurately complete a very brief demographic questionnaire and five other brief questionnaires about the way you think and feel and what you do. To complete these questionnaires carefully, being sure to answer every question as honestly and openly as you can, will require about an hour, possibly more, of your time.

I'd like to quickly review some further facts about your participation that are important so that you can feel comfortable about being open and honest today. Once I finish

reviewing these facts, you can decide if you wish to participate in this research. Then, assuming you do agree to participate in my study, we'll begin the assessment process.

It's important that you give accurate and open information so that those who eventually review this research can trust the results as much as possible. Hence, you should know that your responses to each of the assessments today will remain entirely confidential. You will notice that there is no name on any of the self-assessments you complete today, including the demographic questionnaire. In addition, once you submit your completed assessments, your assessments will be assigned an arbitrary case number and it will be impossible for anyone to know just who completed what assessments and on what date. The questionnaire answers will be entered into a computer database and there will be no further need to reference the paper questionnaires. Instead, they will be stored for five years and then discarded.

It's also very important that your self-assessments are fully completed and that no items are left unanswered. I've included reminders at the end of each assessment to encourage you to quickly review your work to be sure you answered each and every question. In addition, when you submit your completed packet of assessments, I will quickly review your work to confirm your packet is complete. If it is not, I will ask you to take a moment to complete any missing questions.

In addition, it is important that you understand the benefits and risks of participating in this research. The main benefit is that you will help improve our understanding of social behavior. For some of you, another benefit might be that you will be earning extra credit for a class on campus. If that is true, let me remind you that participating in this study is completely voluntary and, if you wish, you can tell your instructor that you wish instead to complete an alternative extra credit assignment. The risks associated with participation in this study are, in my opinion, minimal. It is possible

that some of you may experience slight discomfort as you ponder some of the questions on the self-assessments about how you think, feel and behave. You are reminded, however, that all of the answers are confidential and that the questions do not deal directly with any inappropriate or highly sensitive topics. However, just so you feel safe, please remember that you can stop participating in this study at any time for any reason without penalty or loss of benefits to which you are otherwise entitled. If you choose to stop participating in the study, all of the questionnaires you completed will be destroyed and not included in the study.

At this point, before you decide if you will consent to participate in this research, I'd be happy to answer any questions you have. What questions do you have? [Answer questions].

At this point, if you do not wish to participate in this study, please bring your packet to me and you are free to leave.

Now, I'd like to simply let you know that you are free to begin completing each of the self-assessments included in your packet, beginning with the brief demographic questionnaire. Please be sure to read the instructions for each assessment and carefully and completely answer each question. Take your time. It's important that you think about each question carefully. Feel free to bring your packet up to me at any time if you have questions about an assessment.

Once you're done with all of the assessments, please check back over your packet to be sure you've carefully completed everything and then bring your packet to me. I'll quickly check your packet to make sure it's complete and then you're free to go. If there is already someone working with me, please wait until he or she is done before you bring your completed packet to me. It's important I stay organized.

Thanks again for participating in my study!

APPENDIX B

Title Page of Assessment Packet

*The Relationship Between Dispositional Attachment and Caregiving
Styles, Values, and Prosocial Personality and Behavior*

You have been asked to complete the following research survey.

It should take approximately 60 minutes for you to complete the survey. The purpose of this survey is to better understand how the ways we think may impact how we relate with others.

Your responses are strictly anonymous and your participation is completely voluntary. By completing the survey, you are giving your permission to the researcher to use your anonymous responses at professional meetings and in research publications.

Thank you for your participation.

Robert DuBois
Graduate Student in Educational Psychology
MARQUETTE UNIVERSITY

APPENDIX C

Demographic Questionnaire

*Please do not put your name on this or any of these forms.
This study is completely anonymous and confidential.*

Your Age: _____ years

Your Gender: _____ Female _____ Male

Your Race/Ethnicity: (check all that apply)

_____ African/American/Black _____ Asian/Pacific Islander

_____ Hispanic/Latina _____ White/Non-Hispanic _____ Native American

_____ Other _____ Unknown

Your Role: _____ Student _____ Faculty _____ Staff _____ Other Volunteer

At: _____ Tech College 1 _____ Tech College 2 _____ Other

Are you earning extra credit for your participation in this study? _____ Yes _____ No

What level of stress are you currently experiencing in your life?

1 2 3 4 5 6 7

Not at All

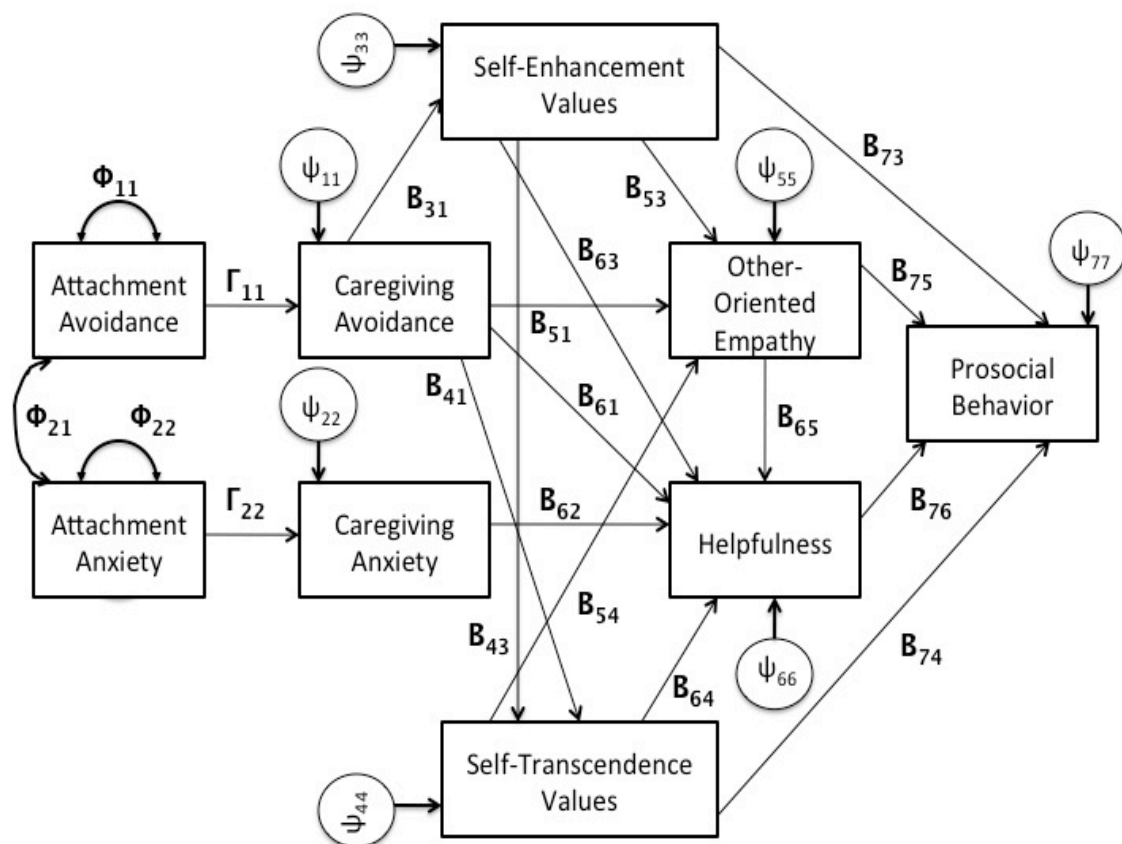
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Moderate

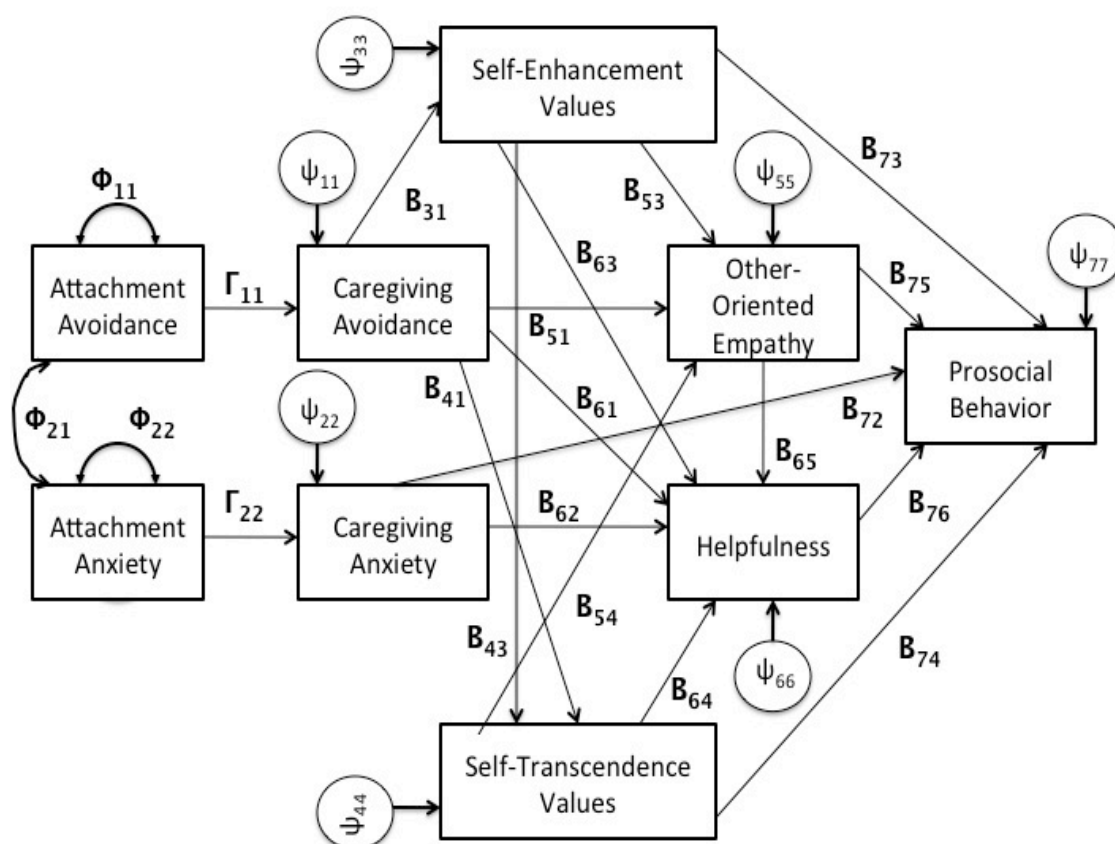
Extreme

APPENDIX D

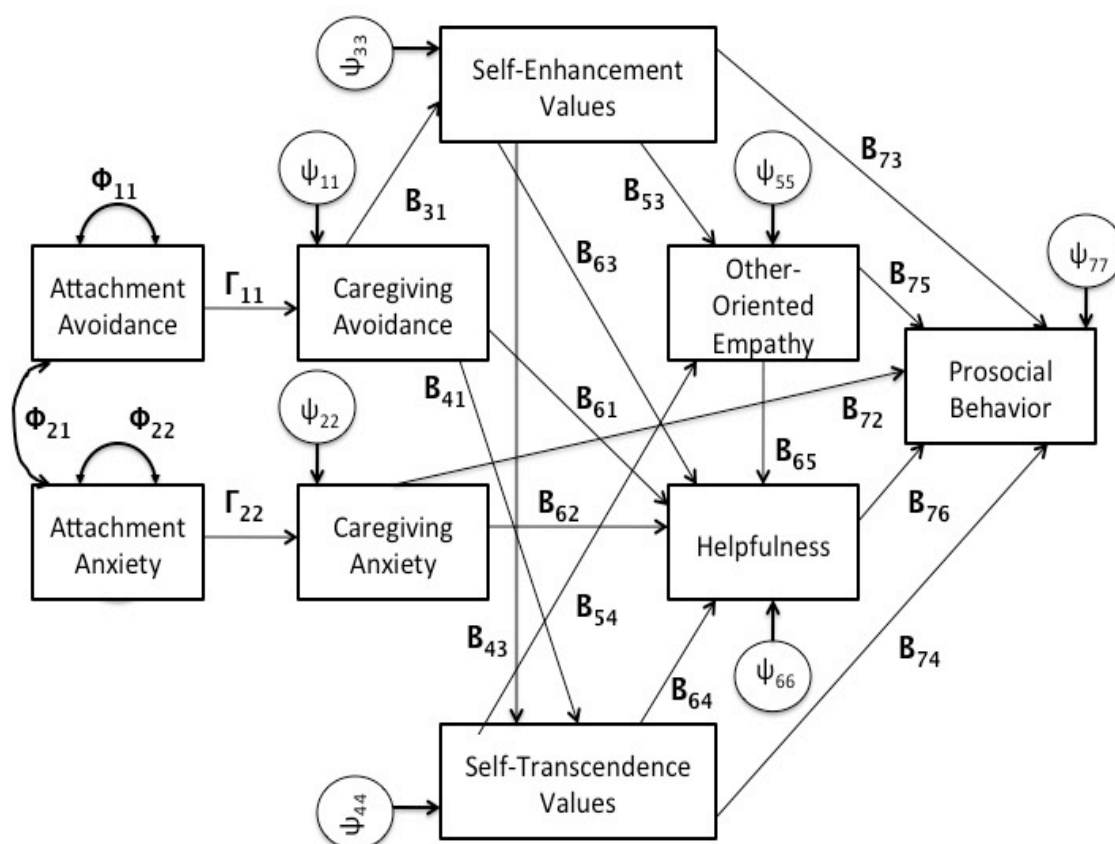
Statistical Models for Models 1, 2, 3a, 3b, 4, 5 and 6



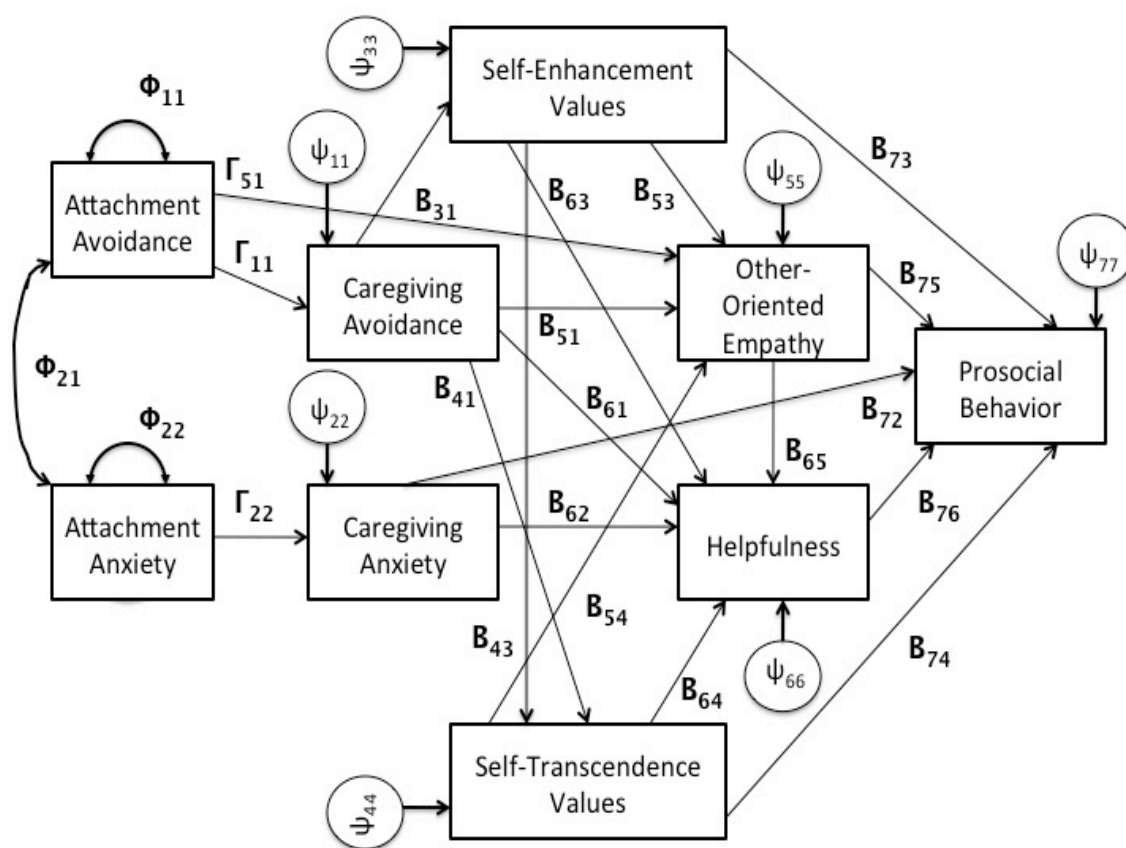
Statistical model for model 1 evaluated in the current study.



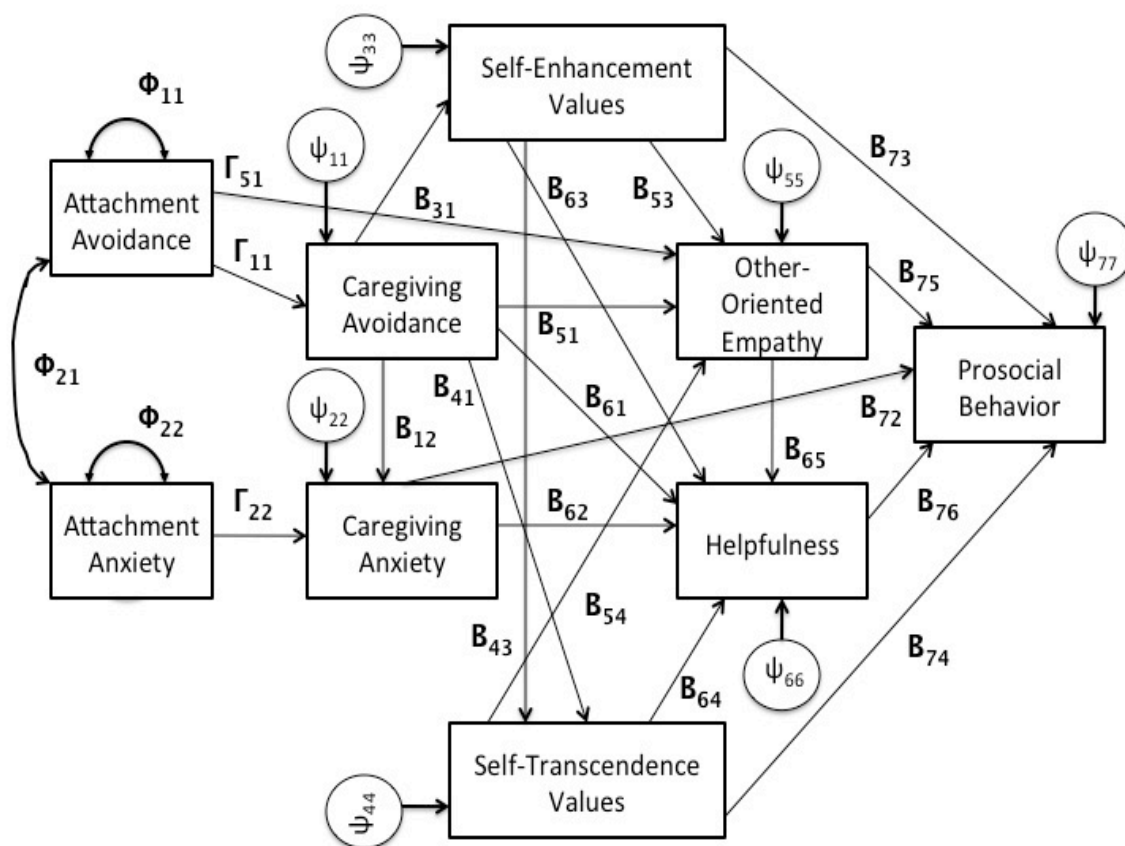
Statistical model for model 2 evaluated in the current study.



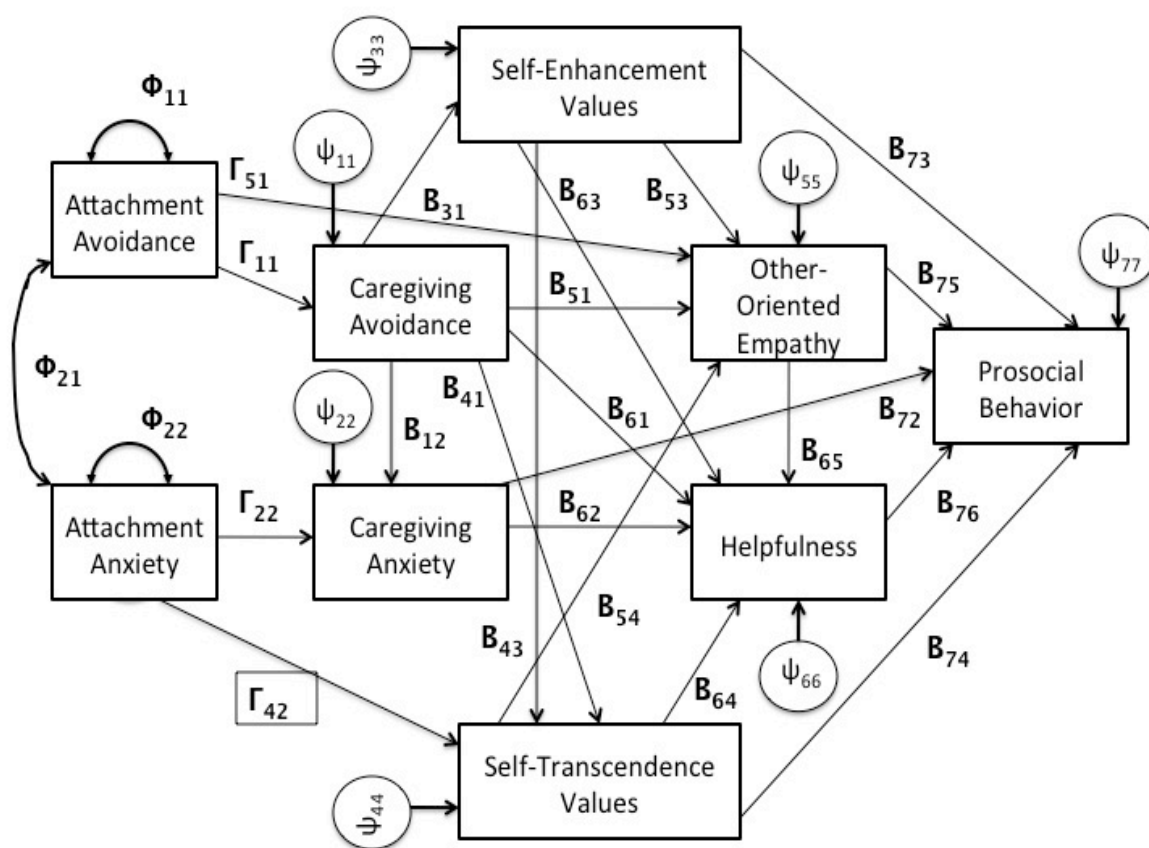
Statistical model for model 3a evaluated in the current study.



Statistical model for model 3b evaluated in the current study.



Statistical model for model 4 evaluated in the current study.



Statistical model for model 5 evaluated in the current study.